

## DOCUMENT RESUME

ED 287 662

SE 048 612

AUTHOR Lundin, Janet, Ed.; And Others  
TITLE Secondary Textbook Review: General Mathematics. Grades Nine through Twelve.  
INSTITUTION California State Dept. of Education, Sacramento.  
REPORT NO ISBN-0-8011-0677-X  
PUB DATE 87  
NOTE 303p.  
AVAILABLE FROM Publications Sales, California State Dept. of Education, P.O. Box 271, Sacramento, CA 95802-0271 (\$6.50).  
PUB TYPE Guides - Non-Classroom Use (055)  
EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.  
DESCRIPTORS High Schools; Mathematical Applications; Mathematics Curriculum; \*Mathematics Instruction; Number Concepts; \*Secondary School Mathematics; \*Textbook Content; \*Textbook Selection  
IDENTIFIERS \*California

## ABSTRACT

This publication is intended to serve as a resource for teachers who are responsible for selecting textbooks for general mathematics courses in high school. Contained are 18 factual textbook reviews. (The reviews do not contain assessments about the quality of the books). Each review includes four parts. Part 1 contains information furnished by the publisher to describe the textbook and its intended audience. Part 2 provides two kinds of information about each textbook in chart format: the first is the emphasis given to each of 25 mathematical topics; the second is the level of the textbook's content compared with levels established as goals or targets in the State of California's "Model Curriculum Standards: Mathematics" and the "Mathematics Framework." Part 3 indicates the extent to which each textbook stresses six "framework focuses" described in the "Mathematics Framework." Part 4 indicates materials that are furnished by the publisher when student textbooks are purchased. Textbooks are included from: (1) Addison-Wesley Publishing Company; (2) Allyn and Bacon, Inc.; (3) Amsco School Publications, Inc.; (4) EDITS; (5) Glencoe Publishing Company; (6) Hammond, Inc.; (7) Harcourt Brace Jovanovich, Inc.; (8) D. C. Heath and Company; (9) Holt, Rinehart and Winston; (10) Houghton Mifflin Company; (11) Laidlaw Educational Publishers; (12) Media Materials, Inc.; (13) Scott, Foresman and Company; (14) University of Chicago Mathematics Project; and (15) West Educational Publishing. (RH)

\*\*\*\*\*  
\* Reproductions supplied by EDRS are the best that can be made \*  
\* from the original document. \*  
\*\*\*\*\*

ED287662

SECONDARY  
TEXTBOOK  
REVIEW

"PERMISSION TO REPRODUCE THIS  
MATERIAL IN MICROFICHE ONLY  
HAS BEEN GRANTED BY

*L. Smith*

TO THE EDUCATIONAL RESOURCES  
INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION  
Office of Educational Research and Improvement  
EDUCATIONAL RESOURCES INFORMATION  
CENTER (ERIC)

☒ This document has been reproduced as  
received from the person or organization  
originating it.

☐ Minor changes have been made to improve  
reproduction quality.

• Points of view or opinions stated in this docu-  
ment do not necessarily represent official  
OERI position or policy.

*General  
Mathematics*

BEST COPY AVAILABLE

SE 048 612

*S*ECONDARY  
TEXTBOOK  
REVIEW:

*General  
Mathematics*

*Grades Nine Through Twelve*



## Publishing Information

---

*Secondary Textbook Review: General Mathematics* was prepared by the Office of Curriculum Framework and Textbook Development, California State Department of Education. This publication was edited by Janet Lundin, working in cooperation with Mae McCarthy and Linda Crayne. This publication was designed and prepared for photo-offset production by the staff of the Bureau of Publications, with the design for the cover and interior design created and prepared by Cheryl Shawver McDonald. Typesetting was done by Anna Boyd and Lea Shimabukuro.

The document was published by the California State Department of Education, 721 Capitol Mall, Sacramento, California (mailing address: P.O. Box 944272, Sacramento, CA 94244-2720). It was distributed under the provisions of the Library Distribution Act and *Government Code* Section 11096.

© Copyright, 1987

California State Department of Education

Copies of this publication are available for \$6.50 per copy, plus sales tax for California residents, from Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, CA 95802-0271.

A list of other publications that are available from the Department may be found on the last page of this publication.

ISBN 0-8011-0677-X



## CONTENTS

|                                                                  | Page |                                                                    |     |
|------------------------------------------------------------------|------|--------------------------------------------------------------------|-----|
| Preface.....                                                     | iv   | <i>General Mathematics: Skills/ Problem Solving/ Applications,</i> |     |
| Acknowledgements.....                                            | v    | 1982.....                                                          | 57  |
| Introduction.....                                                | vii  | D. C. Heath and Company                                            |     |
| What This Document Contains.....                                 | vii  | <i>Heath General Mathematics</i> , 1985.....                       | 65  |
| Considerations in Using This Document.....                       | viii | Holt, Rinehart and Winston                                         |     |
| Addison-Wesley Publishing Company                                |      | <i>Holt General Mathematics</i> , 1982.....                        | 73  |
| <i>General Mathematics: A Fundamental Approach</i> , 1986.....   | 1    | Houghton Mifflin Company                                           |     |
| Allyn and Bacon, Inc.                                            |      | <i>Fundamentals of Mathematics: Skills and Applications,</i>       |     |
| <i>Refresher Mathematics</i> , 1986.....                         | 9    | 1986.....                                                          | 81  |
| Amsco School Publications, Inc.                                  |      | Laidlaw Educational Publishers                                     |     |
| <i>Preliminary Mathematics</i> , 1981.....                       | 17   | <i>Applying Mathematics in Daily Living</i> , 1986.....            | 89  |
| EDITS                                                            |      | <i>Mathematics Skills for Daily Living</i> , 1986.....             | 97  |
| <i>Individualized Mathematics Program (IMP), Levels C and D,</i> |      | Media Materials, Inc.                                              |     |
| 1977.....                                                        | 25   | <i>Basic Mathematics Skills</i> , 1982.....                        | 105 |
| Glencoe Publishing Company                                       |      | <i>Life Skills Mathematics</i> , 1983.....                         | 113 |
| <i>Consumer Mathematics</i> , 1986.....                          | 33   | Scott, Foresman and Company                                        |     |
| Hammond Incorporated                                             |      | <i>Mathematics in Life, Second Edition</i> , 1985.....             | 121 |
| <i>Basic Math Skills for Today's Living</i> , 1986.....          | 41   | University of Chicago School Mathematics Project                   |     |
| Harcourt Brace Jovanovich, Inc.                                  |      | <i>Transition Mathematics</i> , 1985.....                          | 129 |
| <i>Essentials of Mathematics: Consumer and Career</i>            |      | West Educational Publishing                                        |     |
| <i>Applications</i> , 1983.....                                  | 49   | <i>Arithmetic: A Problem-Solving Approach</i> , 1985.....          | 137 |

---

## PREFACE

The impetus for California to provide a resource to improve secondary textbook selection procedures was accelerated by the passage of Senate Bill 813 in 1983. According to this legislation, "the Superintendent shall review currently available textbooks in conjunction with the curriculum standards." Consequently, in keeping with the spirit of the reform effort, the purposes of this document, *Secondary Textbook Review: General Mathematics*, are to (1) assist school districts in the selection of textbooks; and (2) influence positively the quality of textbooks by focusing on the *Model Curriculum Standards: Grades Nine Through Twelve, Mathematics* and the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve*.

This document is a trailblazer. Not only were new procedures called for, but also a factual review instrument had to be developed. These tasks were the result of the collaborative efforts of many professionals. Members of the steering committee generously contributed their professional knowledge and advice. The textbook reviewers, in addition to giving us the benefits of their professional expertise, also gave many hours of their time as they reviewed the textbooks. The names of these individuals are identified in the acknowledgments. We in the California State Department of Education are grateful for the commitment demonstrated by all of these professionals.

This is our first effort in developing a secondary textbook review. We have learned many lessons which we are now applying to the review in another content area. Your constructive suggestions are welcome. We encourage you to let us know whether you find the information in this publication helpful in selecting secondary mathematics textbooks and instructional materials. Please direct your responses to the Office of Curriculum Framework and Textbook Development, California State Department of Education, P.O. Box 944272, Sacramento, CA 94244-2720.

JAMES R. SMITH  
*Deputy Superintendent  
Curriculum and Instructional Leadership*

FRANCIE ALEXANDER  
*Associate Superintendent; and Director  
Curriculum, Instruction,  
and Assessment Division*

GLEN THOMAS  
*Director, Office of Curriculum  
Framework and Textbook Development*

## ACKNOWLEDGMENTS

**T**he following steering committee members contributed to the development of the *Secondary Textbook Review: General Mathematics*:

Joan Akers, Mathematics Coordinator, Office of the San Diego County Superintendent of Schools

Mary Ann Church, Manager of the California Mathematics Initiative, Office of the Alameda County Superintendent of Schools, Hayward

Ruth Cossey, Mathematics Teacher, Oakland Unified School District

Joan M. Gell, Chairperson, Mathematics Department, Palos Verdes Peninsula Unified School District, Palos Verdes Estates

Don Gernes, Mathematics Teacher, El Dorado Union High School District, Diamond Springs

Roberta K. Koss, Chairperson, Mathematics Department, Tamalpais Union High School District, Larkspur

Shelley Kriegler, Mentor/Mathematics Teacher, Beverly Hills Unified School District

Robert Marshall, Editorial Vice-President, Houghton Mifflin Publishing Company, Boston, Massachusetts

Shelly Moore, Editorial Vice-President, Addison-Wesley Publishing Company, Menlo Park

Landon H. Risteen, Vice-President and National Sales Coordinator, Scott, Foresman and Company, Glenview, Illinois

Jorge P. Rubio, Alternative/Independent Study Program Advisor, Fontana Unified School District

Beth Schlesinger, Mathematics Teacher, San Diego City Unified School District

Dorothy Wood, Mathematics Teacher, Tamalpais Union High School District, Larkspur

An early prototype of the *Secondary Textbook Review: General Mathematics* was developed by:

Les Winters, Secondary Mathematics Coordinator, Los Angeles Unified School District

The reviewers of the secondary general mathematics textbooks were:

Nancy Aaberg, District Mathematics Coordinator and Mathematics Teacher, Yuba City Unified School District

Charles Bialowas, Mentor/Mathematics Teacher, Anaheim Union High School District

Dee Brown, Coordinator, Educational Services, Office of the Stanislaus County Superintendent of Schools, Modesto

Ernestine Camp, Mathematics Instructor, Laney College, Oakland

Virginia E. Doyle, Chairperson, Mathematics Department, Tahoe-Truckee Unified School District, Truckee

Ana M. Golan, Demonstration Teacher, Santa Ana Unified School District

Susan A. Hansen, Mentor Teacher and Chairperson, Mathematics Department, Alvord Unified School District, Riverside

Elois Irvin, Chairperson, Mathematics Department, Richmond Unified School District

Elisabeth Klein, Chairperson, Mathematics Department, Albany City Unified School District

Shelley Kriegler, Mentor/Mathematics Teacher, Beverly Hills Unified School District

Lauro Martinez, Secondary Mathematics Curriculum Coordinator, Chino Unified School District

Jerry Neumann, Mathematics Instructor, Garden Grove Unified School District

Antoinette L. Podesto, Staff Development Specialist, Curriculum and Staff Development Office, Stockton Unified School District

Ann M. Preston, Lecturer in Mathematics, University of Santa Clara

Nancy Rach, Chairperson, Mathematics Department, ABC Unified School District, Cerritos

Eric A. A. Sanchez, Mathematics Instructor, Elk Grove Unified School District

Beth Schlesinger, Mathematics Teacher, San Diego City Unified School District

---

Steven Weatherly, Chairperson, Mathematics Department, Nevada  
Joint Union High School District, Grass Valley

Dorothy Wood, Mathematics Teacher, Kern Union High School  
District, Bakersfield

Examination of the reviews for consistency was provided by:

Audrey Vandell, Chairperson, Mathematics Department, San Juan  
Unified School District, Carmichael

*Secondary Textbook Review: General Mathematics* was prepared by  
the Office of Curriculum Framework and Textbook Development, Cali-  
fornia State Department of Education, under the direction of:

Glen Thomas, Director, Office of Curriculum Framework and Text-  
book Development

Leadership and guidance for this process were provided by:

Mae McCarthy, Consultant, Office of Curriculum Framework and  
Textbook Development

Linda Crayne, Associate Governmental Program Analyst, Office of  
Curriculum Framework and Textbook Development

Support from the Mathematics Education Unit was provided by:

Walter Denham, Director, Mathematics, Science, Technology, and  
Human Services, California State Department of Education

## INTRODUCTION

**S**econdary Textbook Review: General Mathematics is intended to serve as a resource for teachers who are responsible for selecting textbooks for general mathematics courses in high school. This document provides teachers with a compilation of factual textbook reviews that can be used as a screening device to reduce the number of textbooks to be reviewed and pilot studies to be conducted. As a result, educators can have more time to analyze a few textbooks in depth. Teachers may also consider using this process, or adapting it, to review textbooks not included in this document.

### What This Document Contains

This document contains 18 factual textbook reviews that are to be used as a resource by secondary mathematics teachers. Each review includes four parts, which are described below:

#### Part I

This section contains information furnished by the publisher to describe the textbook and its intended audience.

#### Part II

This section provides two kinds of information about each textbook in chart format. The first is a depiction of the emphasis given to each of 25 mathematical topics that were extracted from the *Model Curriculum Standards: Mathematics* and the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve*. For each topic the "Degree of Emphasis" was identified by applying the following definitions:

- H** *High emphasis* means a chapter or more or lessons throughout the book.
- M** *Moderate emphasis* means less than a chapter but more than one lesson.

**L** *Limited emphasis* means one lesson.

**N** *Little or no emphasis* means an occasional exercise or mention.

Please note the following:

In cases where the topic has more than one element, the "Degree of Emphasis" that is indicated does not mean that each element is covered to that degree. For example, the topic "Evaluating expressions with roots, powers, and absolute value" may have received an *M* meaning "moderate emphasis"; that is, the elements to be studied appear in "less than a chapter but [in] more than one lesson." This *M* could mean that all three elements were present in the textbook to a moderate degree. On the other hand, an *M* may mean that only one element such as "roots" was covered to a moderate degree.

The second kind of information is an indication of the level of the textbook's content compared with the level established as a goal or target in the *Model Curriculum Standards: Mathematics* and the *Mathematics Framework*. In the *Framework*, the areas of mathematics content are presented by grade level spans—kindergarten through three, three through six, six through eight, and nine through twelve. Each review includes estimates of how much of the treatment of a topic is at the high school core curriculum level (grades nine through twelve) rather than at the earlier levels. The estimations are based on the following definitions:

- \*\*\*\* Means all or virtually all match the *Mathematics Framework's* description for high school core content
- \*\*\* Means mainly high school core content but some from other levels
- \*\* Means mainly content from other levels but some from high school core content
- \* Means little or no match with high school core content
- Blank Means there is no material that matches the high school core curriculum



### Part III

This section highlights six "Framework Focuses" described in the *Mathematics Framework*. Each review gives an indication of the extent to which the "Focuses" are included in the publisher's instructional material. The findings are shown by symbols in the appropriate column on the basis of the following definitions:

- *Substantially* means integrated throughout the book.
- *Somewhat* means taught at least occasionally.
- *Little or none* means little or none.

The location of the "Framework Focuses" within the materials is also identified; for example, whether the "Focuses" appear in the student's or teacher's editions or in the teacher's resource manual is indicated. In addition, information is made available about how the material is presented in the student's edition.

### Part IV

"Information from the Publisher" is found in this section. In Part A the materials identified are furnished without cost when students' textbooks are purchased. Information about ancillary materials which are for sale is also given. Part B contains the "Table of Contents" for each textbook.

### Considerations in Using This Document

Those who are using this document need to keep three considerations in mind. First, this review process was applied only to the portions of each textbook that deal with the curriculum content of the

*Mathematics Framework and Model Curriculum Standards: Mathematics*. These documents do not address computer literacy, computer programming, computer science, or applications such as consumer mathematics. Therefore, this review process does not include reviews of this material that may be in the textbooks. If these topics are of interest, the readers should refer to Section IV, Part B, of this document, which contains the table of contents for each textbook that was reviewed.

Next, ninth and tenth grade general mathematics course descriptions may range from junior high remediation to those resembling Math A and B as presented in the *Mathematics Framework*. Therefore, the first priority for teachers who are selecting general mathematics textbooks is to determine the match between their own course requirements and the level of mathematics content in a specific textbook. Determining that match should be the focus of teachers' attention rather than giving undue weight to how closely a textbook matches the *Framework's* description for high school core content.

*Finally, the intent of this review process is to present factual information about the general mathematics textbooks reviewed rather than to make assessments about the quality of those books. Teachers must determine the quality of textbooks because they are the ones who work with course requirements and who must attend to the skill levels and motivation of specific groups of students. All of this information and more are to be considered in making quality judgments about specific textbooks during the selection process.*

If the information in this publication can serve as a resource in the textbook selection process, then the time and effort invested by the educators and publishers will have been repaid in full.



| PUBLISHER                         | TITLE                                              | COPYRIGHT |
|-----------------------------------|----------------------------------------------------|-----------|
| Addison-Wesley Publishing Company | <i>General Mathematics: A Fundamental Approach</i> | 1986      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**G**ENERAL MATHEMATICS serves ninth and tenth grade students who need a review of arithmetic skills as their final mathematics course or as preparation for more advanced courses. The textbook features clear skill development through a presentation of an algorithm on a flowchart; specific examples; "Try This" exercises, with answers for immediate reinforcement; and abundant practice problems. Problem-

solving lessons *teach* problem-solving skills, and "Problem Corners" (at the end of most skills lessons) provide further practice. Real-life applications of mathematics are shown in lessons on careers and consumer applications. Pretests, chapter reviews, and cumulative tests, keyed to skills and applications lessons, provide for diagnostic and prescriptive procedures.

| PUBLISHER                         | TITLE                                              | COPYRIGHT |
|-----------------------------------|----------------------------------------------------|-----------|
| Addison-Wesley Publishing Company | <i>General Mathematics: A Fundamental Approach</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | *                                      |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | H                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | M                  | *                                      |
| Interpreting data and making inferences                   | N                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Measurement—Continued</b>                                                |   |   |
| Using formulas to determine measures                                        | H | * |
| <b>C. Geometry</b>                                                          |   |   |
| Using geometric properties of plane and solid figures to determine measures | M | * |
| Constructing standard straightedge compass figures                          | N |   |
| Making models, scale drawings, orthographic projections                     | N |   |
| Establishing congruence, similarity, symmetry                               | M | * |
| Using coordinate geometry                                                   | M | * |
| <b>D. Patterns and Functions</b>                                            |   |   |
| Determining and extending patterns                                          | L | * |
| Graphing functions and investigating their properties                       | L | * |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Logic—Continued</b>                                                      |   |   |
| Using deductive reasoning to reach conclusions                              | N |   |
| Distinguishing between necessary and sufficient conditions                  | N |   |
| <b>G. Algebra</b>                                                           |   |   |
| Creating mathematical models to represent situations                        | H | * |
| Evaluating algebraic expressions                                            | L | * |
| Solving equations and inequalities                                          | M | * |
| Solving problems involving direct and inverse variation, including percents | L | * |

| PUBLISHER                         | TITLE                                              | COPYRIGHT |
|-----------------------------------|----------------------------------------------------|-----------|
| Addison-Wesley Publishing Company | <i>General Mathematics: A Fundamental Approach</i> | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             |                                                     |                  |                   | X               |                      |
|                 |          | X              | X                 | X                 |                             |                                                     |                  |                   | X               |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   | X                |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   | X                |                   |                 | X                    |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
| X               |          |                | X                 | X                 |                             | X                                                   | X                |                   | X               | X                    |
|                 | X        |                | X                 | X                 |                             |                                                     |                  |                   | X               |                      |

|                                                                                                                                                    |   |   |   |   |   |  |   |   |  |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|--|---|---|--|---|---|
| <b>C. Use of Calculators</b>                                                                                                                       |   |   |   |   |   |  |   |   |  |   |   |
| Are they used:<br>To illustrate and/or develop concepts?                                                                                           |   | X |   | X | X |  |   |   |  | X |   |
| In lessons designed to teach how to use<br>calculators?                                                                                            |   |   | X |   |   |  |   |   |  |   |   |
| In "calculator" problems?                                                                                                                          |   | X |   | X | X |  |   |   |  | X |   |
| <b>D. Use of Concrete Materials</b>                                                                                                                |   |   |   |   |   |  |   |   |  |   |   |
| Are they used:<br>When new concepts are introduced or when<br>difficult problems are encountered?                                                  |   |   | X |   |   |  |   |   |  |   |   |
| Continuously as ideas are developed?                                                                                                               |   |   | X |   |   |  |   |   |  |   |   |
| Do students work with pictures, drawings, and<br>other representations?                                                                            | X |   |   | X | X |  | X | X |  | X | X |
| <b>E. Situational Lessons</b>                                                                                                                      |   |   |   |   |   |  |   |   |  |   |   |
| Are lessons included which begin with a de-<br>scription of an interesting, challenging situation<br>from which a number of activities can emerge? |   |   | X |   |   |  |   |   |  |   |   |
| Do the lessons provide for:<br>Several problems to be identified?                                                                                  |   |   | X |   |   |  |   |   |  |   |   |
| A variety of approaches to be used?                                                                                                                |   |   | X |   |   |  |   |   |  |   |   |
| Study over several class periods?                                                                                                                  |   |   | X |   |   |  |   |   |  |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                              |   |   |   |   |   |  |   |   |  |   |   |
| Are students:<br>Taught cooperative learning techniques?                                                                                           |   |   | X |   |   |  |   |   |  |   |   |
| Given problems which are specifically<br>designed to be solved in groups?                                                                          |   | X |   |   |   |  |   |   |  | X |   |



| PUBLISHER                         | TITLE                                              | COPYRIGHT |
|-----------------------------------|----------------------------------------------------|-----------|
| Addison-Wesley Publishing Company | <i>General Mathematics: A Fundamental Approach</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

One teacher's edition for each order of 25 students' editions is provided without cost.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

The teacher's edition consists of a student's edition annotated with answers, teaching notes, and references to supplemental booklets. Also, the front matter contains additional answers, an explanation of the program, and sequential lists of lessons correlated to objectives and to additional practice and skills reviews.

##### 3. Description of teacher's resource materials

See related teacher's resource material below. A separate teacher's resource binder is not available with this textbook.

##### 4. Description of related materials available for sale

The *Quiz and Test Booklet* (76 blackline masters) contains two quizzes and one chapter test per chapter, four cumulative tests, and a final cumulative review test keyed to skills and applications lessons in the student's textbook.

The *Making Practice Fun Booklet* (122 blackline masters) provides skills drill in the form of games, puzzles, and riddles keyed to lessons in the student's textbook.

The *Projects Booklet* (62 blackline masters) contains approximately two projects per chapter, providing consumer applications such as reading utility meters, making budgets, and using maps and charts.

Addison-Wesley Publishing Company

*General Mathematics: A Fundamental Approach*

1986

## IV. INFORMATION FROM THE PUBLISHER—Continued

## Part B. Table of Contents

## 1. Adding Whole Numbers and Decimals

|                                        |    |
|----------------------------------------|----|
| Using Numbers for Dates and Time ..... | 4  |
| Place Value to Thousands .....         | 6  |
| Writing Money Notation .....           | 8  |
| Place Value to Billions .....          | 12 |
| Adding Whole Numbers .....             | 14 |
| Adding Larger Numbers .....            | 16 |
| Decimal Place Value .....              | 20 |
| Adding Decimals .....                  | 22 |
| Solving Problems .....                 | 24 |
| Rounding Numbers .....                 | 26 |
| Estimating Sums .....                  | 28 |

## 2. Subtracting Whole Numbers and Decimals

|                                  |    |
|----------------------------------|----|
| Subtracting Whole Numbers .....  | 40 |
| Subtracting Larger Numbers ..... | 42 |
| Zeros in Subtracting .....       | 44 |
| Comparing Decimals .....         | 48 |
| Subtracting Decimals .....       | 50 |
| Estimating Differences .....     | 54 |
| Solving Problems .....           | 56 |

## 3. Multiplying Whole Numbers and Decimals

|                                          |    |
|------------------------------------------|----|
| Multiplying by One-Digit Numbers .....   | 68 |
| Multiplying by Two-Digit Numbers .....   | 70 |
| Multiplying by Three-Digit Numbers ..... | 72 |
| Special Products and Estimating .....    | 76 |
| More on Estimating Products .....        | 78 |
| Multiplying Decimals .....               | 82 |
| Other Special Products .....             | 84 |
| Solving Problems .....                   | 86 |

## 4. Dividing Whole Numbers and Decimals

|                                            |     |
|--------------------------------------------|-----|
| One-Digit Divisors .....                   | 98  |
| Dividing Larger Numbers .....              | 100 |
| Two-Digit Divisors .....                   | 102 |
| Three-Digit Divisors .....                 | 104 |
| Dividing a Decimal by a Whole Number ..... | 108 |
| Special Quotients .....                    | 110 |
| Estimating Quotients .....                 | 112 |
| Dividing a Decimal by a Decimal .....      | 116 |
| Rounding Quotients .....                   | 118 |
| Solving Problems .....                     | 120 |

## 5. Fractions

|                                          |     |
|------------------------------------------|-----|
| Using Fractions .....                    | 136 |
| Fractions Mean Division .....            | 138 |
| Equality .....                           | 140 |
| Comparing Fractions .....                | 142 |
| Writing Decimals as Fractions .....      | 144 |
| Writing Fractions as Decimals .....      | 146 |
| Writing Fractions as Mixed Numbers ..... | 152 |
| Mixed Numbers and Decimals .....         | 154 |

## 6. Multiplying and Dividing Fractions

|                                      |     |
|--------------------------------------|-----|
| Multiplying .....                    | 168 |
| Equivalent Fractions .....           | 170 |
| Simplifying .....                    | 172 |
| Multiplying and Simplifying .....    | 174 |
| Multiplying with Mixed Numbers ..... | 176 |
| Reciprocals and Dividing .....       | 180 |
| Dividing with Mixed Numbers .....    | 182 |

## 7. Adding and Subtracting Fractions

|                                          |     |
|------------------------------------------|-----|
| Adding with the Same Denominators .....  | 196 |
| Least Common Denominator .....           | 198 |
| Adding with Different Denominators ..... | 200 |
| Adding with Mixed Numbers .....          | 202 |
| Subtracting .....                        | 206 |
| Subtracting with Mixed Numbers .....     | 208 |
| Subtracting with Renaming .....          | 210 |

## 8. Ratios and Proportions

|                                          |     |
|------------------------------------------|-----|
| Ratios .....                             | 224 |
| Unit Rates .....                         | 226 |
| Proportions .....                        | 230 |
| Solving Problems Using Proportions ..... | 232 |
| Similar Figures and Proportions .....    | 234 |

## 9. Percent

|                                               |     |
|-----------------------------------------------|-----|
| Converting Percents and Decimals .....        | 248 |
| Converting Percents to Fractions .....        | 250 |
| Converting Fractions to Percents .....        | 252 |
| Translating to Number Sentences .....         | 254 |
| Finding a Percent of a Number .....           | 256 |
| What Percent a Number Is of Another .....     | 258 |
| Finding a Number Given a Percent .....        | 262 |
| Finding Percent of Increase or Decrease ..... | 264 |
| Solving Problems .....                        | 280 |

## 10. Measurement

|                                       |     |
|---------------------------------------|-----|
| Metric Length .....                   | 284 |
| Changing Metric Units of Length ..... | 286 |

| PUBLISHER                         | TITLE                                              | COPYRIGHT |
|-----------------------------------|----------------------------------------------------|-----------|
| Addison-Wesley Publishing Company | <i>General Mathematics: A Fundamental Approach</i> | 1986      |

## Part B. Table of Contents—Continued

### 10. Measurement—Continued

|                          |     |
|--------------------------|-----|
| Metric Capacity .....    | 290 |
| Metric Mass .....        | 292 |
| Temperature .....        | 296 |
| Customary Measures ..... | 298 |
| Measuring Angles .....   | 300 |

### 11. Perimeter and Area

|                                            |     |
|--------------------------------------------|-----|
| Perimeter .....                            | 312 |
| Circumference .....                        | 314 |
| Area of Rectangles and Squares .....       | 318 |
| Area of Parallelograms and Triangles ..... | 320 |
| Area of Trapezoids .....                   | 322 |
| Area of Circles .....                      | 326 |
| Solving Problems .....                     | 328 |

### 12. Volume

|                                    |     |
|------------------------------------|-----|
| Rectangular Prisms and Cubes ..... | 340 |
| Cylinders .....                    | 344 |

|                          |     |
|--------------------------|-----|
| Pyramids and Cones ..... | 346 |
| Spheres .....            | 348 |
| Solving Problems .....   | 364 |

### 13. Graphing and Statistics

|                                   |     |
|-----------------------------------|-----|
| Graphing Ordered Pairs .....      | 368 |
| Making Line Graphs .....          | 370 |
| Making Bar Graphs .....           | 372 |
| Making Circle Graphs .....        | 374 |
| Finding the Mean .....            | 378 |
| Finding the Median and Mode ..... | 380 |

### 14. Positive and Negative Numbers

|                                     |     |
|-------------------------------------|-----|
| Positive and Negative Numbers ..... | 394 |
| Adding on a Number Line .....       | 396 |
| Adding .....                        | 398 |
| Subtracting on a Number Line .....  | 402 |
| Subtracting .....                   | 404 |
| Multiplying .....                   | 406 |
| Dividing .....                      | 408 |

### 15. Expressions and Equations

|                                       |     |
|---------------------------------------|-----|
| Evaluating Expressions .....          | 422 |
| The Addition Principle .....          | 426 |
| The Multiplication Principle .....    | 428 |
| Using the Principles Together .....   | 430 |
| Solving Problems with Equations ..... | 432 |
| Graphing Equations .....              | 436 |

In addition to the topics listed previously, each chapter contains:

- Two application features based on topics in the chapter
- A career feature that emphasizes skills from the chapter
- A "More Practice" page
- A "Chapter Review" and "Test"

There are 11 calculator features and three cumulative skills reviews throughout the textbook.

| PUBLISHER             | TITLE                        | COPYRIGHT |
|-----------------------|------------------------------|-----------|
| Allyn and Bacon, Inc. | <i>Refresher Mathematics</i> | 1986      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**R**EFRESHER MATHEMATICS is a comprehensive program in general mathematics designed to meet the needs of students in grades nine through twelve who are either not yet able to take, or elect not to take, the college preparatory sequence. The thorough coverage of mathematics and problem-solving skills and their applications to everyday life found in *Refresher Mathematics* prepares all students, particularly

those for whom general mathematics is a terminal course, for important real-life experiences that lie ahead. The comprehensive coverage of other important topics, including algebra, provides students with the foundation they will need to succeed, both in subsequent mathematics courses and in the future.

| PUBLISHER             | TITLE                        | COPYRIGHT |
|-----------------------|------------------------------|-----------|
| Allyn and Bacon, Inc. | <i>Refresher Mathematics</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                    |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | **** Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | *** Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | ** Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | * Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                              |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | ***                                    |
| Using rational numbers                                        | H                  | **                                     |
| Using irrational numbers                                      | M                  | **                                     |
| Evaluating expressions with roots, powers, and absolute value | M                  | **                                     |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | M                  | **                                     |
| Converting within a measurement system                        | H                  | ***                                    |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | L                  | **                                     |
| Determining measures of central tendency                  | L                  | *                                      |
| Interpreting data and making inferences                   | L                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |



|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Measurement—Continued</b>                                                |   |     |
| Using formulas to determine measures                                        | H | *** |
| <b>C. Geometry</b>                                                          |   |     |
| Using geometric properties of plane and solid figures to determine measures | H | *** |
| Constructing standard straightedge compass figures                          | H | *** |
| Making models, scale drawings, orthographic projections                     | L | **  |
| Establishing congruence, similarity, symmetry                               | M | **  |
| Using coordinate geometry                                                   | M | **  |
| <b>D. Patterns and Functions</b>                                            |   |     |
| Determining and extending patterns                                          | L | *   |
| Graphing functions and investigating their properties                       | L | *   |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | L | *  |
| Evaluating algebraic expressions                                            | M | ** |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | N |    |

| PUBLISHER             | TITLE                 | COPYRIGHT |
|-----------------------|-----------------------|-----------|
| Allyn and Bacon, Inc. | Refresher Mathematics | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                             |
| Substantially means integrated throughout the book.<br>Somewhat means taught at least occasionally.<br>Little or none means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                |                   | X                 | X                           |                                                     |                  |                   | X               | X                    |
|                 | X        |                | X                 | X                 | X                           |                                                     |                  | X                 |                 | X                    |
| X               |          |                | X                 | X                 | X                           | X                                                   | X                |                   |                 | X                    |
|                 | X        |                | X                 |                   |                             | X                                                   | X                |                   |                 |                      |
|                 | X        |                |                   | X                 |                             | X                                                   |                  |                   |                 |                      |
| X               |          |                | X                 |                   | X                           | X                                                   | X                |                   |                 | X                    |
|                 |          | X              |                   | X                 |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |   |   |   |                |   |   |   |   |  |                               |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|----------------|---|---|---|---|--|-------------------------------|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |                |   |   |   |   |  |                               |   |
| Are they used:                                                                                                                             |   |   |   |                |   |   |   |   |  |                               |   |
| To illustrate and/or develop concepts?                                                                                                     | X |   |   |                | X | X |   | X |  | (work-book)<br>X              |   |
| In lessons designed to teach how to use calculators?                                                                                       | X |   |   |                | X | X |   | X |  | (work-book)<br>X              |   |
| In "calculator" problems?                                                                                                                  | X |   |   | X <sup>1</sup> | X | X |   | X |  | (work book)<br>X <sup>1</sup> |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |                |   |   |   |   |  |                               |   |
| Are they used:                                                                                                                             |   |   |   |                |   |   |   |   |  |                               |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |   | X |                |   |   |   |   |  |                               |   |
| Continuously as ideas are developed?                                                                                                       |   |   | X |                |   |   |   |   |  |                               |   |
| Do students work with pictures, drawings, and other representations?                                                                       | X |   |   | X              | X | X | X | X |  |                               | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |                |   |   |   |   |  |                               |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |   |   |                |   |   |   |   |  |                               |   |
|                                                                                                                                            |   | X |   |                | X |   |   |   |  |                               |   |
| Do the lessons provide for:                                                                                                                |   |   |   |                |   |   |   |   |  |                               |   |
| Several problems to be identified?                                                                                                         |   | X |   |                | X |   |   |   |  |                               |   |
| A variety of approaches to be used?                                                                                                        |   |   | X |                | X |   |   |   |  |                               |   |
| Study over several class periods?                                                                                                          | X |   |   |                | X |   |   |   |  |                               |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |                |   |   |   |   |  |                               |   |
| Are students:                                                                                                                              |   |   |   |                |   |   |   |   |  |                               |   |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |                |   |   |   |   |  |                               |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   | X |   |                | X |   |   |   |  | X                             |   |

<sup>1</sup>Refers to content on pages 62 and 131 in the student's edition. Calculator work sheets featuring calculator problems are also found in the workbook.

| PUBLISHER             | TITLE                        | COPYRIGHT |
|-----------------------|------------------------------|-----------|
| Allyn and Bacon, Inc. | <i>Refresher Mathematics</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

One teacher's edition and one *Alternate Tests, Consumer Forms, and Performance Record Blackline Masters* will be furnished with every 25 students' textbooks purchased.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

In the teacher's edition, complete teaching suggestions appear alongside the student's textbook pages that are shown. Answers are also printed in place on the student's textbook pages.

##### 3. Description of teacher's resource materials

*Alternate Tests, Consumer Forms, and Performance Record Blackline Masters*

##### 4. Description of related materials available for sale

*Refresher Mathematics Workbook*  
Teacher's edition of the workbook

One teacher's edition workbook will be furnished without cost with every 25 students' workbooks purchased.

| PUBLISHER             | TITLE                 | COPYRIGHT |
|-----------------------|-----------------------|-----------|
| Allyn and Bacon, Inc. | Refresher Mathematics | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### Unit 1 Basic Skills in Arithmetic

|                                                             |     |
|-------------------------------------------------------------|-----|
| <b>1. Whole Numbers</b> .....                               | 7   |
| Reading Numerals Naming Whole Numbers .....                 | 8   |
| Writing Numerals Naming Large Whole Numbers .....           | 12  |
| Rounding Whole Numbers .....                                | 16  |
| Addition of Whole Numbers .....                             | 20  |
| Building Problem-Solving Skills .....                       | 26  |
| Subtraction of Whole Numbers .....                          | 28  |
| Building Problem-Solving Skills .....                       | 32  |
| Multiplication of Whole Numbers .....                       | 34  |
| Building Problem-Solving Skills .....                       | 40  |
| Division of Whole Numbers .....                             | 43  |
| Building Problem-Solving Skills .....                       | 50  |
| Factors: Greatest Common Factor (GCF) .....                 | 54  |
| <b>2. Decimals</b> .....                                    | 65  |
| Introduction to Decimals .....                              | 66  |
| Reading Decimals .....                                      | 67  |
| Writing Decimals .....                                      | 70  |
| Rounding Decimals .....                                     | 73  |
| Addition of Decimals .....                                  | 76  |
| Building Problem-Solving Skills .....                       | 81  |
| Subtraction of Decimals .....                               | 83  |
| Building Problem-Solving Skills .....                       | 87  |
| Comparing Decimals .....                                    | 89  |
| Multiplication of Decimals .....                            | 91  |
| Building Problem-Solving Skills .....                       | 95  |
| Division of Decimals .....                                  | 97  |
| Building Problem-Solving Skills .....                       | 104 |
| Finding What Decimal Part One Number Is of Another .....    | 106 |
| Finding the Number When a Decimal Part of It Is Known ..... | 109 |
| Multiplying by Powers of Ten .....                          | 112 |
| Dividing by Powers of Ten .....                             | 115 |

|                                                                  |     |
|------------------------------------------------------------------|-----|
| Writing Complete Numerals for Shortened Names .....              | 119 |
| Writing Shortened Names for Numbers .....                        | 122 |
| <b>3. Fractions</b> .....                                        | 133 |
| Introduction to Fractions .....                                  | 134 |
| Expressing Fractions in Lowest Terms .....                       | 135 |
| Rewriting Improper Fractions and Simplifying Mixed Numbers ..... | 137 |
| Expressing Fractions in Higher Terms .....                       | 140 |
| Equivalent Fractions .....                                       | 142 |
| Comparing Fractions and Rounding Mixed Numbers .....             | 144 |
| Number Multiples .....                                           | 147 |
| Least Common Denominator and Equivalent Fractions .....          | 149 |
| Addition of Fractions and Mixed Numbers .....                    | 151 |
| Building Problem-Solving Skills .....                            | 155 |
| Subtraction of Fractions and Mixed Numbers .....                 | 156 |
| Building Problem-Solving Skills .....                            | 160 |
| Writing Mixed Numbers as Improper Fractions .....                | 162 |
| Multiplication of Fractions and Mixed Numbers .....              | 164 |
| Building Problem-Solving Skills .....                            | 170 |
| Division of Fractions and Mixed Numbers .....                    | 173 |
| Building Problem-Solving Skills .....                            | 177 |
| Finding What Fractional Part One Number Is of Another .....      | 179 |
| Finding a Number When a Fractional Part of It Is Known .....     | 182 |
| Writing Fractions as Decimals .....                              | 185 |
| Writing Decimals as Fractions .....                              | 189 |

|                                                       |     |
|-------------------------------------------------------|-----|
| Ratio .....                                           | 191 |
| Proportion .....                                      | 194 |
| <b>4. Percent</b> .....                               | 203 |
| Introduction to Percent .....                         | 204 |
| Meaning of Percent .....                              | 205 |
| Writing Percents as Decimals .....                    | 207 |
| Writing Decimals as Percents .....                    | 209 |
| Writing Percents as Fractions .....                   | 211 |
| Writing Fractions and Mixed Numbers as Percents ..... | 213 |
| Finding a Percent of a Number .....                   | 217 |
| Building Problem-Solving Skills .....                 | 220 |
| Finding What Percent One Number Is of Another .....   | 221 |
| Building Problem-Solving Skills .....                 | 224 |
| Finding a Number When a Percent of It Is Known .....  | 226 |
| Building Problem-Solving Skills .....                 | 229 |

##### Unit 2 Problem Solving and Consumer Applications

|                                                           |     |
|-----------------------------------------------------------|-----|
| <b>5. Problem Solving</b> .....                           | 247 |
| Introduction to Problem Solving .....                     | 248 |
| Reading to Understand the Problem .....                   | 249 |
| Making Your Plan .....                                    | 252 |
| Solving the Problem .....                                 | 258 |
| Check the Answer .....                                    | 260 |
| Strategy: Guess and Test .....                            | 261 |
| Solving Problems—One-Step Problems .....                  | 262 |
| Solving Problems—Two-Step Problems: Hidden Question ..... | 264 |
| Strategy: Solving Another Way .....                       | 267 |
| Strategy: Working Backwards .....                         | 267 |
| Solving Problems—Multi-Step Problems .....                | 268 |
| Strategy: Patterns .....                                  | 271 |

|                                                             |     |
|-------------------------------------------------------------|-----|
| <b>6. Income, Take-Home Pay, Income Tax</b> .....           | 275 |
| Computing Income .....                                      | 276 |
| Commission .....                                            | 280 |
| Profit and Loss .....                                       | 282 |
| Withholding Tax .....                                       | 286 |
| Social Security Tax .....                                   | 289 |
| State or Local Income Tax—Wage Tax .....                    | 290 |
| Take-Home Pay .....                                         | 291 |
| Federal Income Tax .....                                    | 293 |
| <b>7. Consumer Spending</b> .....                           | 301 |
| Buying Food .....                                           | 302 |
| Unit Pricing—Determining the Better Buy .....               | 305 |
| Discount—Buying at a Sale .....                             | 308 |
| Making Change .....                                         | 312 |
| Sales Tax .....                                             | 314 |
| Utility Services .....                                      | 315 |
| Owning an Automobile .....                                  | 318 |
| Installment Buying .....                                    | 320 |
| Annual Percentage Rate .....                                | 322 |
| Fire Insurance .....                                        | 325 |
| Life Insurance .....                                        | 326 |
| Property Tax .....                                          | 328 |
| Buying and Renting a Home .....                             | 330 |
| <b>8. Managing Money</b> .....                              | 335 |
| Banking .....                                               | 336 |
| Simple Interest .....                                       | 339 |
| Discount Loan and Add-On-Interest Loan .....                | 341 |
| Financing a Car .....                                       | 343 |
| Amortizing a Loan .....                                     | 344 |
| Compound Interest .....                                     | 345 |
| Stocks, Bonds, Mutual Funds, Treasury Bills and Notes ..... | 348 |



| PUBLISHER             | TITLE                 | COPYRIGHT |
|-----------------------|-----------------------|-----------|
| Allyn and Bacon, Inc. | Refresher Mathematics | 1986      |

## Part B. Table of Contents—Continued

### Unit 3 Measurement, Graphs, Statistics, and Probability

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| <b>9. Metric System</b> .....                                     | 363 |
| Introduction to the Metric System .....                           | 364 |
| Measures of Length—Metric .....                                   | 365 |
| Measure of Mass or Weight—Metric .....                            | 369 |
| Measures of Capacity—Metric .....                                 | 371 |
| Measures of Area—Metric .....                                     | 375 |
| Measures of Volume—Metric .....                                   | 377 |
| <b>10. Customary System, Time, and Temperature</b> .....          | 383 |
| Measures of Length—Customary .....                                | 384 |
| Measures of Weight—Customary .....                                | 387 |
| Liquid Measures—Customary .....                                   | 389 |
| Dry Measures—Customary .....                                      | 391 |
| Measures of Area—Customary .....                                  | 392 |
| Measures of Volume—Customary .....                                | 394 |
| Volume, Capacity, and Weight Relationships—Customary .....        | 396 |
| Measuring Time .....                                              | 397 |
| Reading a Timetable .....                                         | 400 |
| Rates of Speed .....                                              | 402 |
| Temperature .....                                                 | 403 |
| <b>11. Graphs, Statistics, and Probability</b> .....              | 407 |
| Bar Graphs .....                                                  | 408 |
| Line Graphs .....                                                 | 410 |
| Circle Graphs .....                                               | 412 |
| Frequency Distributions, Histograms, and Frequency Polygons ..... | 414 |
| Averages—Measures of Central Tendency .....                       | 416 |
| Probability and Odds .....                                        | 419 |

### Unit 4 Geometry

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| <b>12. Lines, Angles, and Triangles</b> .....                   | 431 |
| Points and Lines .....                                          | 432 |
| Naming Angles .....                                             | 436 |
| Kinds of Angles .....                                           | 439 |
| Drawing and Measuring Line Segments .....                       | 441 |
| Scale .....                                                     | 444 |
| Geometric Figures—Plane .....                                   | 447 |
| Geometric Figures—Solid .....                                   | 451 |
| Measuring and Drawing Angles .....                              | 453 |
| Sum of the Measures of the Angles of a Triangle .....           | 455 |
| Sum of the Measures of the Angles of Other Polygons .....       | 456 |
| Special Pairs of Angles .....                                   | 457 |
| Parallel Lines and Angle Relationships .....                    | 460 |
| Congruent Triangles .....                                       | 462 |
| Similar Triangles .....                                         | 464 |
| <b>13. Constructions</b> .....                                  | 469 |
| Copying a Line Segment .....                                    | 470 |
| Copying an Angle .....                                          | 471 |
| Constructing Triangles .....                                    | 472 |
| Constructing a Perpendicular Through a Point on the Line .....  | 475 |
| Constructing a Perpendicular from a Point Not on the Line ..... | 476 |
| Bisecting a Line Segment .....                                  | 477 |
| Bisecting an Angle .....                                        | 478 |
| Constructing a Line Parallel to a Given Line .....              | 479 |
| <b>14. Indirect Measurement</b> .....                           | 485 |
| Squares .....                                                   | 486 |
| Square Roots of Perfect Squares .....                           | 487 |
| Finding Square Roots by Table and Estimation Method .....       | 488 |

|                                                                                     |     |
|-------------------------------------------------------------------------------------|-----|
| Problem-Solving Techniques for Geometric Problems .....                             | 491 |
| Rule of Pythagoras .....                                                            | 492 |
| Finding Distances by Using Similar Triangles .....                                  | 494 |
| Numerical Trigonometry .....                                                        | 496 |
| <b>15. Perimeter, Area, and Volume</b> .....                                        | 503 |
| Perimeter of a Rectangle .....                                                      | 504 |
| Perimeter of a Square .....                                                         | 505 |
| Perimeter of a Triangle .....                                                       | 506 |
| Circumference of a Circle .....                                                     | 507 |
| Area of a Rectangle .....                                                           | 509 |
| Area of a Square .....                                                              | 510 |
| Area of a Parallelogram .....                                                       | 511 |
| Area of a Triangle .....                                                            | 512 |
| Area of a Trapezoid .....                                                           | 513 |
| Area of a Circle .....                                                              | 514 |
| Total Area of a Rectangular Solid .....                                             | 516 |
| Total Area of a Cube .....                                                          | 517 |
| Lateral Area and Total Area of a Right Circular Cylinder and Area of a Sphere ..... | 518 |
| Volume of a Rectangular Solid .....                                                 | 521 |
| Volume of a Cube .....                                                              | 522 |
| Volume of a Right Circular Cylinder .....                                           | 523 |
| Volume of a Sphere, a Right Circular Cone, and a Pyramid .....                      | 524 |

### Unit 5 Algebra

|                                                |     |
|------------------------------------------------|-----|
| <b>16. Positive and Negative Numbers</b> ..... | 539 |
| Introduction to Algebra .....                  | 537 |
| Properties .....                               | 538 |
| Positive and Negative Numbers .....            | 540 |
| Rational and Real Numbers .....                | 542 |
| Absolute Value .....                           | 544 |
| Graphing on the Real Number Line .....         | 545 |
| Opposite Meanings .....                        | 547 |

|                                                        |     |
|--------------------------------------------------------|-----|
| Comparing Integers .....                               | 548 |
| Opposite Directions and Vectors .....                  | 550 |
| Additive Inverse of a Number .....                     | 552 |
| Addition of Integers and Rational Numbers .....        | 553 |
| Subtraction of Integers and Rational Numbers .....     | 557 |
| Multiplication of Integers and Rational Numbers .....  | 560 |
| Division of Integers and Rational Numbers .....        | 562 |
| <b>17. Equations, Formulas, and Inequalities</b> ..... | 567 |
| Algebraic Expressions .....                            | 568 |
| Algebraic Sentences .....                              | 570 |
| Formulas .....                                         | 572 |
| Evaluating Expressions .....                           | 574 |
| Evaluating Formulas .....                              | 576 |
| Solving Equations by Replacement .....                 | 577 |
| Properties of Equality .....                           | 579 |
| Solving Equations by Subtraction .....                 | 582 |
| Solving Equations by Addition .....                    | 583 |
| Solving Equations by Division .....                    | 584 |
| Solving Equations by Multiplication .....              | 585 |
| Solving Equations Using Two Operations .....           | 586 |
| Using Formulas .....                                   | 587 |
| Problem-Solving by the Equation Method .....           | 589 |
| Solving Inequalities .....                             | 591 |
| <b>18. Graphing in the Number Plane</b> .....          | 599 |
| Ordered Pairs .....                                    | 600 |
| Locating Points in the Number Plane .....              | 601 |
| Plotting Points in the Number Plane .....              | 603 |
| Graphing an Equation in the Number Plane .....         | 605 |

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**P**RELIMINARY MATHEMATICS is intended primarily for a pre-algebra ninth-grade audience. The book is organized logically and practically, beginning with a comprehensive review of basic arithmetic concepts and skills (chapters 1 through 4); continuing with the application of these concepts in a series of chapters dealing with measurement and personal and business finance (chapters 5 through 10); and then introducing advanced topics that prepare the student for later mathematics courses (chapters 11 through 17).

Lessons typically begin with a concrete and familiar situation that illustrates a new concept to be taught, move through a series of verbal and symbolic representations of the concept, and end with a procedure or formula that generalizes the particular instances for the student.

Structured learning units promote self-teaching, important for both slow and rapid learners.

Supplementary topics can be included as desired.

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                    |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | **** Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | *** Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | ** Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | * Means little or no match with high school core content                                                          |
|                                                                                       | <i>Blank</i> Means there is no material that matches the high school core curriculum                              |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | **                                     |
| Using rational numbers                                        | H                  | **                                     |
| Using irrational numbers                                      | M                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | L                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | H                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | L                  | *                                      |
| Interpreting data and making inferences                   | L                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | M | *  |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | M | ** |
| Constructing standard straightedge compass figures                          | L | ** |
| Making models, scale drawings, orthographic projections                     | M | ** |
| Establishing congruence, similarity, symmetry                               | M | ** |
| Using coordinate geometry                                                   | N |    |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | L | *  |
| Graphing functions and investigating their properties                       | L | *  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | L | ** |
| Evaluating algebraic expressions                                            | L | ** |
| Solving equations and inequalities                                          | L | *  |
| Solving problems involving direct and inverse variation, including percents | N | *  |

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |



|                                                                                                                                            |  |  |   |   |  |  |   |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|--|--|---|---|--|--|---|--|--|--|--|
| <b>C. Use of Calculators</b>                                                                                                               |  |  |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |  |  |   |   |  |  |   |  |  |  |  |
| To illustrate and/or develop concepts?                                                                                                     |  |  | X |   |  |  |   |  |  |  |  |
| In lessons designed to teach how to use calculators?                                                                                       |  |  | X |   |  |  |   |  |  |  |  |
| In "calculator" problems?                                                                                                                  |  |  | X |   |  |  |   |  |  |  |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |  |  |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |  |  |   |   |  |  |   |  |  |  |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |  |  | X |   |  |  |   |  |  |  |  |
| Continuously as ideas are developed?                                                                                                       |  |  | X |   |  |  |   |  |  |  |  |
| Do students work with pictures, drawings, and other representations?                                                                       |  |  | X | X |  |  | X |  |  |  |  |
| <b>E. Situational Lessons</b>                                                                                                              |  |  |   |   |  |  |   |  |  |  |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |  |  | X |   |  |  |   |  |  |  |  |
| Do the lessons provide for:                                                                                                                |  |  |   |   |  |  |   |  |  |  |  |
| Several problems to be identified?                                                                                                         |  |  | X |   |  |  |   |  |  |  |  |
| A variety of approaches to be used?                                                                                                        |  |  | X |   |  |  |   |  |  |  |  |
| Study over several class periods?                                                                                                          |  |  | X |   |  |  |   |  |  |  |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |  |  |   |   |  |  |   |  |  |  |  |
| Are students:                                                                                                                              |  |  |   |   |  |  |   |  |  |  |  |
| Taught cooperative learning techniques?                                                                                                    |  |  | X |   |  |  |   |  |  |  |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |  |  | X |   |  |  |   |  |  |  |  |

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

**1. Description of components supplied with the student's edition without cost**

The textbook is available in a hardbound or paperback edition. An answer key accompanies the textbook.

**2. Description of the teacher's edition**

- ☐ Annotated
- ☐ Teaching notes
- ☐ Answers/placement

No teacher's edition is available.

**3. Description of teacher's resource materials**

No teacher's resource materials are available.

**4. Description of related materials available for sale**

Not available.

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                                                  |            |                                                                    |            |                                                                     |            |
|------------------------------------------------------------------|------------|--------------------------------------------------------------------|------------|---------------------------------------------------------------------|------------|
| <b>1. Arithmetic of Whole Numbers</b> .....                      | <b>1</b>   | <b>5. Arithmetic of the English System of Measures</b> .....       | <b>206</b> | <b>10. Ratio</b> .....                                              | <b>316</b> |
| The Decimal Numeration System                                    |            | Length                                                             |            | Using Ratios to Compare Numbers                                     |            |
| Rounding                                                         |            | Weight                                                             |            | Equivalent Decimals and Percents                                    |            |
| Operations on the Whole Numbers                                  |            | Liquids                                                            |            | Scale Drawings                                                      |            |
| Properties of Addition and Multiplication                        |            | Time                                                               |            |                                                                     |            |
| Using Sets                                                       |            | Counting                                                           |            | <b>11. Algebra Involving the Numbers of Arithmetic</b> .....        | <b>332</b> |
| Solving Problems Step-by-Step                                    |            | Performing Arithmetic Operations on Measures                       |            | The Number Line                                                     |            |
| <b>2. Arithmetic of Common Fractions and Mixed Numbers</b> ..... | <b>59</b>  | <b>6. Arithmetic of the Metric System of Measures</b> .....        | <b>225</b> | Algebraic Expressions                                               |            |
| Improper Fractions                                               |            | Computing with Metric Measures of Length, Area, Volume, and Weight |            | Formulas                                                            |            |
| Lowest Terms                                                     |            | Comparing English and Metric Units                                 |            | Like Terms                                                          |            |
| Higher Terms                                                     |            | <b>7. Arithmetic in the Home</b> .....                             | <b>249</b> | Writing and Solving Equations                                       |            |
| Comparing Fractions                                              |            | Budgeting                                                          |            | Proportions                                                         |            |
| Operations Involving Fractions                                   |            | Installment Plans                                                  |            | Using Equations to Solve Problems                                   |            |
| Whole Numbers and Mixed Numbers                                  |            | Buying Insurance                                                   |            | Squares and Square Roots                                            |            |
| Finding What Fractional Part One Number Is of Another            |            | Paying Taxes                                                       |            | Finding Square Roots in a Table by Estimating and by Using Division |            |
| <b>3. Arithmetic of Decimal Fractions</b> .....                  | <b>127</b> | <b>8. Arithmetic in Business Practice</b> .....                    | <b>278</b> | <b>12. Signed Numbers</b> .....                                     | <b>398</b> |
| Comparing Decimals                                               |            | Cost, Selling Price, Profit and Loss                               |            | Graphing Signed Numbers on the Number Line                          |            |
| Rounding                                                         |            | Buying at Discount                                                 |            | Operations on Signed Numbers                                        |            |
| Operations Involving Decimals and Powers of Ten                  |            | Commission                                                         |            | Algebraic Expressions Involving Signed Numbers                      |            |
| Conversions Between Fractions and Decimals                       |            | <b>9. Arithmetic in Banking Practice</b> .....                     | <b>297</b> | <b>13. Sets and Solution Sets</b> .....                             | <b>425</b> |
| <b>4. Arithmetic of Percents</b> .....                           | <b>177</b> | Types of Checks                                                    |            | Kinds of Sets                                                       |            |
| Conversions Among Decimals, Percents, and Fractions              |            | Interest                                                           |            | Intersection and Union                                              |            |
| What Percent One Number Is of Another                            |            | Notes                                                              |            | Finding and Graphing Solution Sets                                  |            |
| Percent of Increase or Decrease                                  |            | Savings                                                            |            |                                                                     |            |
|                                                                  |            | Investments                                                        |            |                                                                     |            |

| PUBLISHER                       | TITLE                          | COPYRIGHT |
|---------------------------------|--------------------------------|-----------|
| Amsco School Publications, Inc. | <i>Preliminary Mathematics</i> | 1981      |

**Part B. Table of Contents—Continued**

|                                             |            |                                                |            |                                           |            |
|---------------------------------------------|------------|------------------------------------------------|------------|-------------------------------------------|------------|
| <b>14. Geometry</b> .....                   | <b>456</b> | <b>15. Graphs</b> .....                        | <b>556</b> | <b>17. Scientific Notation</b> .....      | <b>612</b> |
| Basic Geometric Terms                       |            | Interpreting and Making Pictographs, Bar,      |            | Powers of Ten to Express the Values of    |            |
| Circles, Angles, Parallel Lines, Triangles, |            | Line, Circle, and Rectangle Graphs             |            | Decimals                                  |            |
| and Quadrilaterals                          |            | Graphing a Formula                             |            | Using Scientific Notation to Express Very |            |
| Similarity                                  |            |                                                |            | Large and Very Small Numbers              |            |
| Perimeter, Area, and Volume                 |            | <b>16. Nondecimal Numeration Systems</b> ..... | <b>579</b> |                                           |            |
| Surface Area                                |            | Computing in Other Numeration Systems          |            |                                           |            |
| Symmetry                                    |            |                                                |            |                                           |            |
| Constructions                               |            |                                                |            |                                           |            |

| PUBLISHER | TITLE                                                              | COPYRIGHT |
|-----------|--------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)<br/>Levels C and D</i> | 1977      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**I**NDIVIDUALIZED MATHEMATICS PROGRAM (IMP) is an individually prescribed program containing assessment and diagnostic devices with correlated teaching materials and methods. The kit provides for the wide ranges of achievement levels represented in classrooms, with continual assessment of progress, diagnosis of deficiencies, and prescription of instructional materials. Each IMP kit contains preassessment, diagnostic instruments; checklists of performance objec-

tives; and lesson units (MATH-PAK) that are correlated with the performance objectives.

In the IMP, each MATH-PAK is an eight-page individual instruction booklet, prefaced with a statement of the objective and containing a diagnostic pretest, a practice self-test, and a separate post-test covering the operation.



| PUBLISHER | TITLE                                                              | COPYRIGHT |
|-----------|--------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)<br/>Levels C and D</i> | 1977      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                |                                                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum |                                                                                                              |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | ****                                           | Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | ***                                            | Means mainly high school core content but some from other levels                                             |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | **                                             | Means mainly from other levels but some from high school core content                                        |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | *                                              | Means little or no match with high school core content                                                       |
|                                                                                       | <b>Blank</b>                                   | Means there is no material that matches the high school core curriculum                                      |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | *                                      |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | M                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | M                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | M                  | ***                                    |
| Determining theoretical and empirical probability         | M                  | **                                     |
| Determining measures of central tendency                  | M                  | *                                      |
| Interpreting data and making inferences                   | M                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | M                  | **                                     |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | *  |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | M | *  |
| Constructing standard straightedge compass figures                          | N |    |
| Making models, scale drawings, orthographic projections                     | L | *  |
| Establishing congruence, similarity, symmetry                               | N |    |
| Using coordinate geometry                                                   | L | ** |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | M | *  |
| Graphing functions and investigating their properties                       | M | *  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | M | ** |
| Distinguishing between necessary and sufficient conditions                  | M | ** |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | *  |
| Evaluating algebraic expressions                                            | L | *  |
| Solving equations and inequalities                                          | M | *  |
| Solving problems involving direct and inverse variation, including percents | M | ** |

| PUBLISHER | TITLE                                                              | COPYRIGHT |
|-----------|--------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)<br/>Levels C and D</i> | 1977      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

|                                                                                                                                            |  |   |   |   |  |  |   |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|---|--|--|---|--|--|--|--|
| <b>C. Use of Calculators</b>                                                                                                               |  |   |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |  |   |   |   |  |  |   |  |  |  |  |
| To illustrate and/or develop concepts?                                                                                                     |  |   | X |   |  |  |   |  |  |  |  |
| In lessons designed to teach how to use calculators?                                                                                       |  |   | X |   |  |  |   |  |  |  |  |
| In "calculator" problems?                                                                                                                  |  |   | X |   |  |  |   |  |  |  |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |  |   |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |  |   |   |   |  |  |   |  |  |  |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |  |   | X |   |  |  |   |  |  |  |  |
| Continuously as ideas are developed?                                                                                                       |  |   | X |   |  |  |   |  |  |  |  |
| Do students work with pictures, drawings, and other representations?                                                                       |  | X |   | X |  |  | X |  |  |  |  |
| <b>E. Situational Lessons</b>                                                                                                              |  |   |   |   |  |  |   |  |  |  |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |  |   | X |   |  |  |   |  |  |  |  |
| Do the lessons provide for:                                                                                                                |  |   |   |   |  |  |   |  |  |  |  |
| Several problems to be identified?                                                                                                         |  |   | X |   |  |  |   |  |  |  |  |
| A variety of approaches to be used?                                                                                                        |  |   | X |   |  |  |   |  |  |  |  |
| Study over several class periods?                                                                                                          |  |   | X |   |  |  |   |  |  |  |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |  |   |   |   |  |  |   |  |  |  |  |
| Are students:                                                                                                                              |  |   |   |   |  |  |   |  |  |  |  |
| Taught cooperative learning techniques?                                                                                                    |  |   | X |   |  |  |   |  |  |  |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |  |   | X |   |  |  |   |  |  |  |  |

| PUBLISHER | TITLE                                                              | COPYRIGHT |
|-----------|--------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)<br/>Levels C and D</i> | 1977      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The complete kit contains all the component parts for students' use and also teachers' evaluation materials.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☐ Teaching notes
- ☒ Answers/placement

The teacher's manual is designed to acquaint the teacher with the use of these materials.

##### 3. Description of teacher's resource materials

The technical manual is designed to be used by certificated school employees who have some technical knowledge of test construction and use.

The students' progress chart indicates achievement differences and growth for each student.

##### 4. Description of related materials available for sale

The metric supplement kit is for sale.



| PUBLISHER | TITLE                                                              | COPYRIGHT |
|-----------|--------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)<br/>Levels C and D</i> | 1977      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                                        |                 |                                                      |    |                                               |                 |
|--------------------------------------------------------|-----------------|------------------------------------------------------|----|-----------------------------------------------|-----------------|
| <b>Level C</b>                                         | <b>MATH-PAK</b> |                                                      |    |                                               |                 |
| <b>Arithmetic Skills</b>                               |                 |                                                      |    |                                               |                 |
| Addition of Whole Numbers .....                        | 1               | Subtract Decimals .....                              | 24 | <b>Modern Concepts</b>                        |                 |
| Subtraction of Whole Numbers .....                     | 2               | Multiply Decimals .....                              | 25 | Name Numbers in Sequence .....                | 50              |
| Multiplication of Whole Numbers .....                  | 3               | Divide Decimals .....                                | 26 | Identify Ordered Pairs .....                  | 51              |
| Division of Whole Numbers .....                        | 4               | Find Percent of a Whole Number .....                 | 27 | Identify Functions .....                      | 52              |
| Combine Integers with Like Signs .....                 | 5               | Find Percent One Number Is of Another ....           | 28 | Identify Union and Intersection of Sets ..... | 53              |
| Combine Integers with Unlike Signs .....               | 6               | Find a Number Given a Percent of<br>the Number ..... | 29 | Write a Number in Expanded Form .....         | 54              |
| Subtract Two-Digit Integers with Like<br>Signs .....   | 7               | Find Square Root .....                               | 30 | Convert to Other Number Bases .....           | 55              |
| Subtract Two-Digit Integers with Unlike<br>Signs ..... | 8               | Identify Real Number Definitions .....               | 31 | Convert Base 2 to Base 5, 8, or 10 .....      | 56              |
| Multiplication of Integers .....                       | 9               | Identify Irrational Numbers .....                    | 32 | Add Base 2 Numbers .....                      | 57              |
| Division of Integers .....                             | 10              | Combining Literal Numbers .....                      | 33 | Multiply Base 2 Numbers .....                 | 58              |
| Reducing Fractions .....                               | 11              | Multiplication of Literal Numbers .....              | 34 | Solve Inequalities .....                      | 59              |
| Change Mixed Number to Improper<br>Fraction .....      | 12              | Division of Literal Numbers .....                    | 35 | Identify and Write Inequality Statements .... | 60              |
| Change Improper Fraction to Mixed<br>Number .....      | 13              | <b>Geometry-Measurement-Application</b>              |    | Identify Number Properties .....              | 61              |
| Find a Lowest Common Denominator .....                 | 14              | Identify Quadrilaterals .....                        | 36 | Define Divisibility Rules .....               | 62              |
| Identify Wholes, Integers, and Rationals ....          | 15              | Identify Triangles .....                             | 37 | Identify Prime Numbers .....                  | 63              |
| Name Terminating or Repeating Decimals ...             | 16              | Calculate the Perimeter of a Rectangle .....         | 38 | Identify Prime Factors .....                  | 64              |
| Change Fractions to Decimals .....                     | 17              | Calculate the Circumference of a Circle .....        | 39 |                                               |                 |
| Change Decimals to Fractions .....                     | 18              | Calculate the Area of a Rectangle .....              | 40 | <b>Level D</b>                                | <b>MATH-PAK</b> |
| Addition of Fractions .....                            | 19              | Calculate the Area of a Circle .....                 | 41 | <b>Arithmetic Skills</b>                      |                 |
| Subtraction of Fractions .....                         | 20              | Calculate the Area of a Triangle .....               | 42 | Addition of Whole Numbers .....               | 1               |
| Multiply Mixed Numbers .....                           | 21              | Calculate the Hypotenuse of a Triangle .....         | 43 | Subtraction of Whole Numbers .....            | 2               |
| Divide Mixed Numbers .....                             | 22              | Add or Subtract Time .....                           | 44 | Multiplication of Whole Numbers .....         | 3               |
| Add Decimals .....                                     | 23              | Measure a Line Segment .....                         | 45 | Division of Whole Numbers .....               | 4               |
|                                                        |                 | Add or Subtract Length Measurements ....             | 46 | Combining Integers .....                      | 5               |
|                                                        |                 | Find Total Price Given Per Unit Price .....          | 47 | Multiplication and Division of Integers ..... | 6               |
|                                                        |                 | Solve Word Problems .....                            | 48 | Addition of Fractions .....                   | 7               |
|                                                        |                 | Solve a Proportion .....                             | 49 | Subtraction of Fractions .....                | 8               |
|                                                        |                 |                                                      |    | Multiplication of Fractions .....             | 9               |
|                                                        |                 |                                                      |    | Division of Fractions .....                   | 10              |

| PUBLISHER | TITLE                                                                    | COPYRIGHT |
|-----------|--------------------------------------------------------------------------|-----------|
| EDITS     | <i>Individualized Mathematics Program (IMP)</i><br><i>Levels C and D</i> | 1977      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part B. Table of Contents—Continued

|                                            |    |                                         |    |
|--------------------------------------------|----|-----------------------------------------|----|
| <b>Arithmetic Skills—Continued</b>         |    |                                         |    |
| Addition of Decimals .....                 | 11 | Interest—Loans .....                    | 20 |
| Subtraction of Decimals .....              | 12 | Find Insurance Cost Given Premiums and  |    |
| Multiplication of Decimal Fractions .....  | 13 | Discounts .....                         | 21 |
| Division of Decimal Fractions .....        | 14 | Compare Insurance Rates, Premiums,      |    |
| Addition of Fractions and Decimal          |    | and Claims .....                        | 22 |
| Fractions .....                            | 15 | Probability .....                       | 23 |
| Find Percent of a Whole Number .....       | 16 | Combinations .....                      | 24 |
| Find Percent One Number Is of Another .... | 17 | Averages .....                          | 25 |
| Find a Number Given a Percent of           |    | Logic .....                             | 26 |
| the Number .....                           | 18 | Family Budget .....                     | 27 |
| <b>Arithmetic Application</b>              |    | Wages and Earnings .....                | 28 |
| Sale Prices .....                          | 19 | Balancing Checking Accounts .....       | 29 |
|                                            |    | Formulas .....                          | 30 |
|                                            |    | Perimeter-Quadrilateral .....           | 31 |
|                                            |    | Area—Irregular Polygons .....           | 32 |
|                                            |    | Area—Coverage .....                     | 33 |
|                                            |    | Area—Cost .....                         | 34 |
|                                            |    | Solid Figures .....                     | 35 |
|                                            |    | Compare Costs Per Volume .....          | 36 |
|                                            |    | Determine Minimum Price Per Volume .... | 37 |
|                                            |    | Bar Graphs .....                        | 38 |
|                                            |    | Make Conclusions Using Graphs .....     | 39 |
|                                            |    | Property Taxes .....                    | 40 |
|                                            |    | Determine Tax Rates .....               | 41 |
|                                            |    | Income Taxes .....                      | 42 |
|                                            |    | Functions—Ordered Pairs .....           | 43 |
|                                            |    | Functions—Range and Domain, Cartesian   |    |
|                                            |    | Planes .....                            | 44 |

| PUBLISHER                  | TITLE                       | COPYRIGHT |
|----------------------------|-----------------------------|-----------|
| Glencoe Publishing Company | <i>Consumer Mathematics</i> | 1986      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**C**ONSUMER MATHEMATICS develops an understanding of today's complex economy by presenting sound money-management practices and the computational skills needed to solve consumer problems. Carefully revised, this text combines completely up-to-date consumer information, with varied strategies for teaching and learning that have been extensively tested in classrooms. The material in chapters 1

through 3 is concentrated on basic computational skills. These skills are then applied and extended in chapters 4 through 11, which cover the full range of consumer concerns, from buying food, clothing, and housing to understanding credit and investing in stocks and bonds. The intended audience for *Consumer Mathematics* is average students in grades nine through twelve.

| PUBLISHER                  | TITLE                       | COPYRIGHT |
|----------------------------|-----------------------------|-----------|
| Glencoe Publishing Company | <i>Consumer Mathematics</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | N                  | -                                      |
| Using rational numbers                                        | M                  | **                                     |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | N                  |                                        |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | L                  | **                                     |
| Determining measures of central tendency                  | L                  | **                                     |
| Interpreting data and making inferences                   | L                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |  |
|-----------------------------------------------------------------------------|---|--|
| <b>Measurement—Continued</b>                                                |   |  |
| Using formulas to determine measures                                        | N |  |
| <b>C. Geometry</b>                                                          |   |  |
| Using geometric properties of plane and solid figures to determine measures | N |  |
| Constructing standard straightedge compass figures                          | N |  |
| Making models, scale drawings, orthographic projections                     | N |  |
| Establishing congruence, similarity, symmetry                               | N |  |
| Using coordinate geometry                                                   | N |  |
| <b>D. Patterns and Functions</b>                                            |   |  |
| Determining and extending patterns                                          | N |  |
| Graphing functions and investigating their properties                       | N |  |

|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Logic—Continued</b>                                                      |   |     |
| Using deductive reasoning to reach conclusions                              | M | *   |
| Distinguishing between necessary and sufficient conditions                  | N |     |
| <b>G. Algebra</b>                                                           |   |     |
| Creating mathematical models to represent situations                        | L | *   |
| Evaluating algebraic expressions                                            | N |     |
| Solving equations and inequalities                                          | L | *   |
| Solving problems involving direct and inverse variation, including percents | H | *** |



| PUBLISHER                  | TITLE                | COPYRIGHT |
|----------------------------|----------------------|-----------|
| Glencoe Publishing Company | Consumer Mathematics | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                             |
| Substantially means integrated throughout the book.<br>Somewhat means taught at least occasionally.<br>Little or none means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   | X               |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |   |   |   |   |   |  |   |  |  |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|--|---|--|--|---|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |   |   |  |   |  |  |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |  |   |  |  |   |   |
| To illustrate and/or develop concepts?                                                                                                     |   |   | X | X |   |  | X |  |  |   |   |
| In lessons designed to teach how to use calculators?                                                                                       |   | X |   | X | X |  | X |  |  | X |   |
| In "calculator" problems?                                                                                                                  |   | X |   | X | X |  | X |  |  | X |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |   |   |  |   |  |  |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |  |   |  |  |   |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |   | X |   |   |  |   |  |  |   |   |
| Continuously as ideas are developed?                                                                                                       |   |   | X |   |   |  |   |  |  |   |   |
| Do students work with pictures, drawings, and other representations?                                                                       | X |   |   | X | X |  | X |  |  |   | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |   |   |  |   |  |  |   |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? | X |   |   | X | X |  | X |  |  |   |   |
| Do the lessons provide for:                                                                                                                |   |   |   |   |   |  |   |  |  |   |   |
| Several problems to be identified?                                                                                                         | X |   |   | X | X |  | X |  |  |   |   |
| A variety of approaches to be used?                                                                                                        |   | X |   | X | X |  | X |  |  |   |   |
| Study over several class periods?                                                                                                          |   | X |   | X | X |  | X |  |  |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |   |   |  |   |  |  |   |   |
| Are students:                                                                                                                              |   |   |   |   |   |  |   |  |  |   |   |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |   |   |  |   |  |  |   |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |   | X |   |   |  |   |  |  |   |   |

| PUBLISHER                  | TITLE                       | COPYRIGHT |
|----------------------------|-----------------------------|-----------|
| Glencoe Publishing Company | <i>Consumer Mathematics</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The teacher's annotated edition provides detailed suggestions and strategies, enrichment material and ideas, answers to problems and exercises in the students' textbooks, and a complete testing program in the form of blackline masters.

The teacher's annotated edition is provided free on a one to 25 teacher to student ratio, as needed.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☐ Teaching notes
- ☐ Answers/placement

##### 3. Description of teacher's resource materials

All teacher's materials are included in the teacher's annotated edition. See the description of the teacher's annotated edition in item 1.

##### 4. Description of related materials available for sale

The student's workbook provides two work sheets for every chapter section to help the teacher reinforce and extend the textbook material. This workbook is accompanied by its own teacher's annotated edition.

The student's test booklet contains testing programs, consisting of a diagnostic pretest plus a mastery test for each chapter in a handy, ready-to-use booklet form.

| PUBLISHER                  | TITLE                       | COPYRIGHT |
|----------------------------|-----------------------------|-----------|
| Glencoe Publishing Company | <i>Consumer Mathematics</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                                                        |     |                                                                                 |     |                                                 |     |
|------------------------------------------------------------------------|-----|---------------------------------------------------------------------------------|-----|-------------------------------------------------|-----|
| <b>1. Operations with Whole Numbers, Decimals, and Fractions</b> ..... | 1   | <b>4. Income</b> .....                                                          | 107 | <b>7. Borrowing Money</b> .....                 | 255 |
| Adding and Subtracting with Whole Numbers and Decimals .....           | 2   | Wages and Salaries .....                                                        | 108 | Simple Interest .....                           | 256 |
| Multiplying and Dividing with Whole Numbers and Decimals .....         | 9   | Fees and Commissions .....                                                      | 112 | Annual Percentage Rate (APR) .....              | 261 |
| Working with Fractions and Decimals .....                              | 18  | Fringe Benefits and Payroll Deductions .....                                    | 116 | Borrowing from a Bank or Savings and Loan ..... | 265 |
| Adding and Subtracting with Fractions and Mixed Numbers .....          | 25  | Unemployment Compensation and Welfare .....                                     | 124 | Borrowing from a Credit Union .....             | 269 |
| Multiplying and Dividing with Fractions and Mixed Numbers .....        | 33  | Profits and the Free Enterprise System .....                                    | 132 | Borrowing from Other Sources .....              | 274 |
| Comparing Fractions and Decimals .....                                 | 39  | Federal Income Tax .....                                                        | 137 | <b>8. Investments</b> .....                     | 281 |
| <b>2. Ratio, Proportion, and Percentage</b> .....                      | 47  | State Income Tax .....                                                          | 145 | Investing in Stock .....                        | 282 |
| Ratio and Percentage .....                                             | 48  | <b>5. Money Management</b> .....                                                | 155 | Investing in Bonds .....                        | 287 |
| Percentage .....                                                       | 56  | Planning a Budget .....                                                         | 156 | Social Security and Retirement Income .....     | 293 |
| Solving Problems with Percentage .....                                 | 60  | Making a Budget .....                                                           | 162 | Trust Funds and Estate Planning .....           | 299 |
| Percentage of Increase and Decrease .....                              | 66  | Budget Problems .....                                                           | 168 | Miscellaneous Investments .....                 | 305 |
| <b>3. Graphs and Statistics</b> .....                                  | 73  | Using a Savings Account .....                                                   | 174 | Cumulative Test 3: Chapters 1—8 .....           | 312 |
| Statistical Tables and Pictographs .....                               | 74  | Using a Checking Account .....                                                  | 183 | <b>9. Health Care</b> .....                     | 315 |
| Bar Graphs, Line Graphs, and Circle Graphs .....                       | 78  | Reconciling a Bank Statement and Understanding the Federal Reserve System ..... | 189 | Medical and Hospital Costs .....                | 316 |
| Statistics: Mean, Mode, Median, and Range .....                        | 88  | Cumulative Test 2: Chapters 1—5 .....                                           | 200 | Health Insurance .....                          | 322 |
| Probability and Odds .....                                             | 94  | <b>6. Buying Consumer Goods and Services</b> ....                               | 203 | Life Insurance .....                            | 329 |
| Cumulative Test 1: Chapters 1—3 .....                                  | 105 | Buying Food .....                                                               | 204 | Medicare and Medicaid .....                     | 335 |
|                                                                        |     | Buying Clothing .....                                                           | 209 | <b>10. Transportation and Travel</b> .....      | 343 |
|                                                                        |     | Buying Leisure and Educational Services .....                                   | 214 | Purchasing or Leasing an Automobile .....       | 344 |
|                                                                        |     | Sales Tax .....                                                                 | 221 | Automobile Insurance .....                      | 352 |
|                                                                        |     | Installment Purchases and Credit Cards .....                                    | 226 | Operating Costs .....                           | 359 |
|                                                                        |     | Buying by Mail .....                                                            | 235 | Public Transportation .....                     | 365 |
|                                                                        |     | Consumer Warranties and Protection .....                                        | 244 | Travel by Bus, Train, or Plane .....            | 370 |
|                                                                        |     |                                                                                 |     | Planning a Trip and Reading a Map .....         | 380 |

| PUBLISHER                  | TITLE                       | COPYRIGHT |
|----------------------------|-----------------------------|-----------|
| Glencoe Publishing Company | <i>Consumer Mathematics</i> | 1986      |

**Part B. Table of Contents—Continued**

|                                       |     |                                           |     |                                         |     |
|---------------------------------------|-----|-------------------------------------------|-----|-----------------------------------------|-----|
| <b>11. Housing</b> .....              | 393 | Maintenance Costs .....                   | 426 | Appendix 3 Units of Measurement .....   | 449 |
| Renting an Apartment or a House ..... | 394 | Housing Alternatives .....                | 435 | Glossary .....                          | 453 |
| Buying a Home .....                   | 400 | Cumulative Test 4: Chapters 1—11 .....    | 442 | Table of Geometric Formulas .....       | 460 |
| Property Insurance .....              | 407 | Appendix 1 Using a Calculator .....       | 445 | Answers to Odd-Numbered Exercises ..... | 461 |
| Property Tax .....                    | 414 | Appendix 2 The Computer: Flowcharts ..... | 447 | Index .....                             | 469 |

| PUBLISHER            | TITLE                                       | COPYRIGHT |
|----------------------|---------------------------------------------|-----------|
| Hammond Incorporated | <i>Basic Math Skills for Today's Living</i> | 1986      |

# I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**B**ASIC MATH SKILLS FOR TODAY'S LIVING is for remedial instruction in grades nine through twelve. The shape of the books gives the impression of workable pamphlets instead of textbooks, the format that represents failure for the intended users. The learning goals are stated at the beginning of each lesson so that the objectives are clear. There are three kinds of activities in the lessons: "Problem Solving

Practice" is skill development; "Progress Checkpoint" helps evaluate students' learning progress; and "Thinking It Through" applies concepts learned to solving word problems. Exercises, which appear in color-tinted boxes at the end of each activity, provide multiple reinforcement throughout each book. A glossary and final test are included.



| PUBLISHER            | TITLE                                       | COPYRIGHT |
|----------------------|---------------------------------------------|-----------|
| Hammond Incorporated | <i>Basic Math Skills for Today's Living</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | N                  |                                        |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | L                  | *                                      |
| Interpreting data and making inferences                   | N                  |                                        |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Measurement—Continued</b>                                                |   |   |
| Using formulas to determine measures                                        | M | * |
| <b>C. Geometry</b>                                                          |   |   |
| Using geometric properties of plane and solid figures to determine measures | M | * |
| Constructing standard straightedge compass figures                          | N |   |
| Making models, scale drawings, orthographic projections                     | N |   |
| Establishing congruence, similarity, symmetry                               | N |   |
| Using coordinate geometry                                                   | N |   |
| <b>D. Patterns and Functions</b>                                            |   |   |
| Determining and extending patterns                                          | N |   |
| Graphing functions and investigating their properties                       | N |   |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Logic—Continued</b>                                                      |   |   |
| Using deductive reasoning to reach conclusions                              | N |   |
| Distinguishing between necessary and sufficient conditions                  | N |   |
| <b>G. Algebra</b>                                                           |   |   |
| Creating mathematical models to represent situations                        | M | * |
| Evaluating algebraic expressions                                            | N |   |
| Solving equations and inequalities                                          | M | * |
| Solving problems involving direct and inverse variation, including percents | N |   |

| PUBLISHER            | TITLE                                       | COPYRIGHT |
|----------------------|---------------------------------------------|-----------|
| Hammond Incorporated | <i>Basic Math Skills for Today's Living</i> | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |  |   |   |   |   |  |   |  |  |  |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|---|---|--|---|--|--|--|---|
| <b>C. Use of Calculators</b>                                                                                                               |  |   |   |   |   |  |   |  |  |  |   |
| Are they used:                                                                                                                             |  |   |   |   |   |  |   |  |  |  |   |
| To illustrate and/or develop concepts?                                                                                                     |  |   | X |   |   |  |   |  |  |  |   |
| In lessons designed to teach how to use calculators?                                                                                       |  |   | X |   |   |  |   |  |  |  |   |
| In "calculator" problems?                                                                                                                  |  |   | X |   |   |  |   |  |  |  |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |  |   |   |   |   |  |   |  |  |  |   |
| Are they used:                                                                                                                             |  |   |   |   |   |  |   |  |  |  |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |  |   | X |   |   |  |   |  |  |  |   |
| Continuously as ideas are developed?                                                                                                       |  |   | X |   |   |  |   |  |  |  |   |
| Do students work with pictures, drawings, and other representations?                                                                       |  | X |   | X | X |  | X |  |  |  | X |
| <b>E. Situational Lessons</b>                                                                                                              |  |   |   |   |   |  |   |  |  |  |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |  |   | X |   |   |  |   |  |  |  |   |
| Do the lessons provide for:                                                                                                                |  |   |   |   |   |  |   |  |  |  |   |
| Several problems to be identified?                                                                                                         |  |   | X |   |   |  |   |  |  |  |   |
| A variety of approaches to be used?                                                                                                        |  |   | X |   |   |  |   |  |  |  |   |
| Study over several class periods?                                                                                                          |  |   | X |   |   |  |   |  |  |  |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |  |   |   |   |   |  |   |  |  |  |   |
| Are students:                                                                                                                              |  |   |   |   |   |  |   |  |  |  |   |
| Taught cooperative learning techniques?                                                                                                    |  |   | X |   |   |  |   |  |  |  |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |  |   | X |   |   |  |   |  |  |  |   |

| PUBLISHER            | TITLE                                       | COPYRIGHT |
|----------------------|---------------------------------------------|-----------|
| Hammond Incorporated | <i>Basic Math Skills for Today's Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

With each 25 students' texts, one answer key is provided at no charge. This 16-page key provides the answers for all four books in this series.

##### 2. Description of the teacher's edition

- ☐ Annotated
- ☐ Teaching notes
- ☐ Answers/placement

This series does not require a separate teacher's edition.

##### 3. Description of teacher's resource materials

This series does not have teacher's resource materials.

##### 4. Description of related materials available for sale

Additional copies of the answer key are available for purchase.

| PUBLISHER            | TITLE                                       | COPYRIGHT |
|----------------------|---------------------------------------------|-----------|
| Hammond Incorporated | <i>Basic Math Skills for Today's Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

###### Whole Numbers

|                                                           |    |
|-----------------------------------------------------------|----|
| Numerals and Place Value .....                            | 2  |
| Basic Addition Facts .....                                | 4  |
| Addition with Renaming (Carrying) .....                   | 6  |
| Finding Perimeter .....                                   | 8  |
| Basic Subtraction Facts .....                             | 9  |
| Subtractions with Renaming (Borrowing) ...                | 11 |
| Renaming with Zero in Subtraction .....                   | 12 |
| Basic Multiplication Facts .....                          | 13 |
| Multiplication of Multiples of 10, 100,<br>or 1,000 ..... | 15 |
| Using Two- and Three-Digit Multipliers ....               | 17 |
| Using What You've Learned: Area<br>and Volume .....       | 19 |
| Basic Division Facts .....                                | 21 |
| Using Two-Digit Divisors .....                            | 24 |
| Using Three-Digit Divisors .....                          | 26 |
| Dividing with Zeros in the Quotient .....                 | 27 |
| Finding Averages .....                                    | 28 |
| Final Checkpoint .....                                    | 29 |
| Glossary .....                                            | 32 |

###### Decimals

|                                                   |    |
|---------------------------------------------------|----|
| Decimals and Place Value .....                    | 2  |
| Ordering Decimals .....                           | 5  |
| Adding Decimals .....                             | 6  |
| Subtracting Decimals .....                        | 9  |
| Multiplying Decimals .....                        | 12 |
| Rounding Products .....                           | 14 |
| Multiplying 10, 100, 1,000 .....                  | 16 |
| Metric Measurement: Multiplying<br>Decimals ..... | 17 |
| Dividing a Decimal by a Whole Number ....         | 18 |

|                                           |    |
|-------------------------------------------|----|
| Dividing Decimals by a Decimal .....      | 20 |
| Dividing by 10, 100, 1,000 .....          | 22 |
| Metric Measurement: Dividing Decimals ... | 23 |
| Rounding Quotients .....                  | 25 |
| Writing Fractions as Decimals .....       | 27 |
| Final Checkpoint .....                    | 29 |
| Glossary .....                            | 32 |

###### Fractions

|                                                                       |    |
|-----------------------------------------------------------------------|----|
| Fractions and Mixed Numbers .....                                     | 2  |
| Finding Equal Fractions .....                                         | 3  |
| Simplifying Fractions (Reducing) .....                                | 4  |
| Remainders in Division as Fractions .....                             | 6  |
| Renaming Improper Fractions and Mixed<br>Numbers .....                | 7  |
| Adding Fractions: Same Denominator ....                               | 8  |
| Adding Mixed Numbers: Same<br>Denominator .....                       | 10 |
| Comparing Fractions: Least Common<br>Denominator .....                | 11 |
| Adding Fractions and Mixed Numbers:<br>Different Denominators .....   | 13 |
| Using What You've Learned: Perimeter ....                             | 15 |
| Subtracting Fractions .....                                           | 16 |
| Subtracting Mixed Numbers .....                                       | 18 |
| Subtracting Mixed Numbers (Renaming):<br>Same Denominator .....       | 19 |
| Subtracting Mixed Numbers (Renaming):<br>Different Denominators ..... | 20 |
| Multiplying Fractions .....                                           | 22 |
| Multiplying Fractions and Whole<br>Numbers .....                      | 24 |
| Multiplying Mixed Numbers .....                                       | 26 |

|                                                      |    |
|------------------------------------------------------|----|
| Using What You've Learned: Area and<br>Volume .....  | 27 |
| Reciprocals .....                                    | 30 |
| Dividing by Fractions .....                          | 32 |
| Dividing by Mixed Numbers and Whole<br>Numbers ..... | 34 |
| Finding Rate, Time, and Distance .....               | 36 |
| Final Checkpoint .....                               | 38 |
| Glossary .....                                       | 40 |

###### Ratio, Proportion, and Percent

|                                                             |                    |
|-------------------------------------------------------------|--------------------|
| Writing Ratios .....                                        | 2                  |
| Proportions and Cross-Products .....                        | 4                  |
| Solving Proportions .....                                   | 6                  |
| Using Proportions: Rate .....                               | 8                  |
| Writing Percents .....                                      | 10                 |
| Percents and Fractions .....                                | 11                 |
| Percents and Decimals .....                                 | 14                 |
| Finding Percents of Numbers: Working<br>with a Budget ..... | 16                 |
| Discounts and Sale Price .....                              | 18                 |
| Computing Sales Tax .....                                   | 20                 |
| Finding Sales Commission .....                              | 22                 |
| Simple and Compound Interest .....                          | 24                 |
| Finding a Percent .....                                     | 26                 |
| Computing Net Profit .....                                  | 28                 |
| Finding Numbers When Percents Are<br>Known .....            | 29                 |
| Final Checkpoint .....                                      | 31                 |
| Glossary .....                                              | (inside backcover) |



| PUBLISHER                       | TITLE                                                              | COPYRIGHT |
|---------------------------------|--------------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>Essentials of Mathematics: Consumer and Career Applications</i> | 1983      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

*ESSENTIALS OF MATHEMATICS: CONSUMER AND CAREER SKILLS AND APPLICATIONS* gives evidence of its flexibility with its five-unit structure. Unit I (chapters 1 through 6) contains a review of the essential skills that are required for the consumer and career applications in units II through V (chapters 7 through 18). These units can be taught in any sequence. The "Applications" exercises in

Unit I, the problem-solving techniques and lessons on rounding and estimating in units II through V, and the career and calculator applications in units I through V reflect the contemporary flavor of the program. Appendix A: "Introduction to Algebra" and Appendix B: "Introduction to Computers" add to the flexibility of the program.

| PUBLISHER                       | TITLE                                                              | COPYRIGHT |
|---------------------------------|--------------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>Essentials of Mathematics: Consumer and Career Applications</i> | 1983      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | M                  | *                                      |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | M                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  | *                                      |
| Converting within a measurement system                        | H                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  | *                                      |
| Determining theoretical and empirical probability         | N                  | *                                      |
| Determining measures of central tendency                  | M                  | *                                      |
| Interpreting data and making inferences                   | H                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  | *                                      |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | ** |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | N | *  |
| Constructing standard straightedge compass figures                          | N | *  |
| Making models, scale drawings, orthographic projections                     | N | *  |
| Establishing congruence, similarity, symmetry                               | N | *  |
| Using coordinate geometry                                                   | L | *  |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | N | *  |
| Graphing functions and investigating their properties                       | N | *  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N | *  |
| Distinguishing between necessary and sufficient conditions                  | N | *  |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | ** |
| Evaluating algebraic expressions                                            | L | *  |
| Solving equations and inequalities                                          | H | *  |
| Solving problems involving direct and inverse variation, including percents | H | *  |

Harcourt Brace Jovanovich, Inc.

*Essentials of Mathematics: Consumer and Career Applications*

1983

## III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                        |
|------------------------------------------------------------|
| Extent Included                                            |
| <i>Substantially</i> means integrated throughout the book. |
| <i>Somewhat</i> means taught at least occasionally.        |
| <i>Little or none</i> means little or none.                |

## A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

## B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
| X               |          |                | X                 | X                 | X                           | X                                                   | X                |                   | X               | X                    |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 | X                           | X                                                   | X                |                   | X               | X                    |
| X               |          |                | X                 | X                 | X                           |                                                     | X                |                   | X               | X                    |
| X               |          |                | X                 | X                 | X                           | X                                                   | X                |                   | X               | X                    |

|                                                                                                                                            |   |   |   |   |   |   |   |   |  |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|--|---|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |   |   |   |   |   |  |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |   |   |   |  |   |   |
| To illustrate and/or develop concepts?                                                                                                     |   | X |   | X |   |   |   |   |  | X |   |
| In lessons designed to teach how to use calculators?                                                                                       |   |   | X |   |   |   |   |   |  |   |   |
| In "calculator" problems?                                                                                                                  |   |   | X |   |   |   |   |   |  |   |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |   |   |   |   |   |  |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |   |   |   |  |   |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |   | X |   |   |   |   |   |  |   |   |
| Continuously as ideas are developed?                                                                                                       |   |   | X |   |   |   |   |   |  |   |   |
| Do students work with pictures, drawings, and other representations?                                                                       | X |   |   | X | X | X | X | X |  | X | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |   |   |   |   |   |  |   |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |   | X |   |   |   |   |   |  |   |   |
| Do the lessons provide for:                                                                                                                |   |   |   |   |   |   |   |   |  |   |   |
| Several problems to be identified?                                                                                                         |   |   | X |   |   |   |   |   |  |   |   |
| A variety of approaches to be used?                                                                                                        |   |   | X |   |   |   |   |   |  |   |   |
| Study over several class periods?                                                                                                          |   |   | X |   |   |   |   |   |  |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |   |   |   |   |   |  |   |   |
| Are students:                                                                                                                              |   |   |   |   |   |   |   |   |  |   |   |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |   |   |   |   |   |  |   |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |   | X |   |   |   |   |   |  |   |   |

| PUBLISHER                       | TITLE                                                              | COPYRIGHT |
|---------------------------------|--------------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>Essentials of Mathematics: Consumer and Career Applications</i> | 1983      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The teacher's resource book is a paperback publication that consists of copying masters that are perforated and three-hole punched. This publication contains two forms of each chapter test, six cumulative tests, a sample competency test, a consumer competency test, a 112-page workbook section that is correlated to the textbook, and an answer section.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

##### 3. Description of teacher's resource materials

See the previous description of the teacher's resource book.

##### 4. Description of related materials available for sale

The test booklet is a 92-page, self-cover publication with perforated pages. It contains two forms of each chapter test, six cumulative tests (one for each of the six units), a sample competency test that covers the content of chapters 1 through 6, and a consumer competency test that covers the content in chapters 7 through 18.

The workbook is a 112-page publication with perforated pages. The contents are correlated to the related pages in the student's edition, and this publication is accompanied by an annotated teacher's edition.



| PUBLISHER                       | TITLE                                                          | COPYRIGHT |
|---------------------------------|----------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>Essentials of Mathematics: Consumer/Career Applications</i> | 1983      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### 1. Whole Numbers and Decimals

|                                                   |    |
|---------------------------------------------------|----|
| Addition and Subtraction: Whole Numbers .....     | 2  |
| Addition and Subtraction: Decimals .....          | 4  |
| Multiplication: Whole Numbers .....               | 6  |
| Multiplication: Decimals .....                    | 8  |
| Career Skills and Applications: Stock Clerk ..... | 11 |
| Division: Whole Numbers .....                     | 12 |
| Division: Decimals .....                          | 14 |
| Rounding the Quotient .....                       | 16 |
| Rounding and Estimation .....                     | 18 |
| Career Skills and Applications: Bus Driver .....  | 20 |

##### 2. Applying Metric Measures

|                                                   |    |
|---------------------------------------------------|----|
| Metric Units of Length .....                      | 28 |
| Perimeter .....                                   | 30 |
| Metric Units of Mass .....                        | 32 |
| Metric Units of Capacity .....                    | 34 |
| Area and Volume .....                             | 36 |
| Temperature .....                                 | 38 |
| Career Skills and Applications: Electrician ..... | 39 |

##### 3. Fractions

|                                                    |    |
|----------------------------------------------------|----|
| Fractions: Mixed Numbers and Lowest Terms .....    | 46 |
| Addition and Subtraction: Like Fractions .....     | 48 |
| Addition: Unlike Fractions/Mixed Numbers .....     | 50 |
| Subtraction: Unlike Fractions/Mixed Numbers .....  | 52 |
| Career Skills and Applications: Travel Agent ..... | 55 |

|                                                                   |    |
|-------------------------------------------------------------------|----|
| Multiplication: Fractions and Mixed Numbers .....                 | 56 |
| Division: Fractions and Mixed Numbers .....                       | 58 |
| Rounding and Estimation .....                                     | 60 |
| Career Skills and Applications: Air Conditioning Technician ..... | 62 |

##### 4. Equations/Ratio/Proportion

|                                             |    |
|---------------------------------------------|----|
| Equations: Addition/Subtraction .....       | 72 |
| Equations: Multiplication/Division .....    | 74 |
| Solving Equations .....                     | 76 |
| Ratio .....                                 | 78 |
| Proportions .....                           | 80 |
| Career Skills and Applications: Nurse ..... | 82 |

##### 5. Percent

|                                                     |     |
|-----------------------------------------------------|-----|
| Percent, Decimals, and Fractions .....              | 90  |
| Writing Percents for Decimals and Fractions .....   | 92  |
| Finding a Percent of a Number .....                 | 94  |
| Finding What Percent One Number Is of Another ..... | 96  |
| Career Skills and Applications: Photographer .....  | 98  |
| Finding a Number Given a Percent .....              | 100 |
| Percent and Estimation .....                        | 102 |

##### 6. Statistics

|                                               |     |
|-----------------------------------------------|-----|
| Bar Graphs and Applications .....             | 110 |
| Line Graphs and Applications .....            | 112 |
| Angles .....                                  | 114 |
| Circle Graphs and Applications .....          | 116 |
| The Mean and the Mode with Applications ..... | 118 |
| The Median with Applications .....            | 120 |

|                                                     |     |
|-----------------------------------------------------|-----|
| Career Skills and Applications: Store Manager ..... | 122 |
|-----------------------------------------------------|-----|

##### 7. Income

|                                                        |     |
|--------------------------------------------------------|-----|
| Hourly Wages .....                                     | 138 |
| Career Skills and Applications: Truck Driver .....     | 140 |
| Commission .....                                       | 142 |
| Deductions and Net Pay .....                           | 144 |
| Social Security .....                                  | 146 |
| Career Skills and Applications: Personnel Worker ..... | 148 |
| Rounding and Estimation .....                          | 150 |

##### 8. Income Tax

|                                                     |     |
|-----------------------------------------------------|-----|
| Federal Income Tax .....                            | 158 |
| Adjusted Gross Income and Deductions .....          | 160 |
| Career Skills and Applications: Sales Clerk .....   | 162 |
| Form 1040A—The Short Form .....                     | 163 |
| Taxable Income and Tax Tables .....                 | 166 |
| Career Skills and Applications: Payroll Clerk ..... | 168 |
| State and City Income Taxes .....                   | 170 |
| Rounding and Estimation .....                       | 172 |

##### 9. Banking

|                                                    |     |
|----------------------------------------------------|-----|
| Deposit Slips .....                                | 180 |
| Interest .....                                     | 182 |
| Compound Interest .....                            | 184 |
| Career Skills and Applications: Loan Officer ..... | 186 |
| Check Stubs and Check Registers .....              | 188 |
| Writing Checks .....                               | 191 |
| Reconciling a Bank Statement .....                 | 193 |

|                                               |     |
|-----------------------------------------------|-----|
| Career Skills and Applications: Cashier ..... | 196 |
| Rounding and Estimation .....                 | 198 |

##### 10. Buying a Car

|                                                           |     |
|-----------------------------------------------------------|-----|
| Sticker Price .....                                       | 208 |
| Making a Deal .....                                       | 210 |
| Financing a Car .....                                     | 212 |
| Career Skills and Applications: Used Car Dealer .....     | 214 |
| Liability Insurance .....                                 | 216 |
| Collision/Comprehensive Insurance .....                   | 218 |
| Career Skills and Applications: Radiator Technician ..... | 220 |
| Rounding and Estimation .....                             | 222 |

##### 11. Owning a Car

|                                                      |     |
|------------------------------------------------------|-----|
| Maintenance Costs .....                              | 230 |
| Depreciation .....                                   | 232 |
| Career Skills and Applications: Auto Mechanic .....  | 234 |
| Gasoline Costs .....                                 | 236 |
| Yearly Driving Costs .....                           | 238 |
| Career Skills and Applications: Police Officer ..... | 240 |
| Rounding and Estimation .....                        | 242 |

##### 12. Other Ways to Travel

|                                                         |     |
|---------------------------------------------------------|-----|
| Renting a Car .....                                     | 250 |
| Career Skills and Applications: Car Leasing Agent ..... | 252 |
| Commuting to Work .....                                 | 254 |
| Comparing Costs of Travel .....                         | 256 |
| Career Skills and Applications: Flight Attendant .....  | 258 |
| Rounding and Estimation .....                           | 260 |

Harcourt Brace Jovanovich, Inc.

*Essentials of Mathematics: Consumer and Career Applications*

1983

**Part B. Table of Contents—Continued****13. Food Costs**

|                                                           |     |
|-----------------------------------------------------------|-----|
| Comparing Costs: Unit Price .....                         | 270 |
| Saving Money: No-Name Brands .....                        | 272 |
| Career Skills and Applications:                           |     |
| Accounting Clerk .....                                    | 274 |
| Saving Money: Coupons .....                               | 276 |
| Cost Per Serving .....                                    | 278 |
| Career Skills and Applications: Waiter/<br>Waitress ..... | 280 |
| Rounding and Estimation .....                             | 282 |

**14. Housing**

|                                                            |     |
|------------------------------------------------------------|-----|
| Renting .....                                              | 290 |
| Mortgage Loans .....                                       | 292 |
| Career Skills and Applications:                            |     |
| Surveyor .....                                             | 294 |
| Monthly Mortgage Payments .....                            | 296 |
| Career Skills and Applications:                            |     |
| Property Manager .....                                     | 298 |
| Homeowner's Insurance .....                                | 299 |
| Career Skills and Applications: Real<br>Estate Agent ..... | 302 |
| Property Taxes .....                                       | 304 |
| Rounding and Estimation .....                              | 306 |

**15. Housing Costs**

|                                                              |     |
|--------------------------------------------------------------|-----|
| Heating and Cooling Costs .....                              | 314 |
| Cost of Operating Appliances .....                           | 316 |
| Career Skills and Applications: Utilities<br>Clerk .....     | 318 |
| Reading Meters .....                                         | 320 |
| Wallpapering and Estimation .....                            | 322 |
| Career Skills and Applications: Drafting<br>Technician ..... | 324 |
| Painting and Estimation .....                                | 326 |
| Rounding and Estimation .....                                | 328 |

**16. Buying Goods**

|                                                         |     |
|---------------------------------------------------------|-----|
| Discount .....                                          | 338 |
| Buying by Mail .....                                    | 340 |
| Career Skills and Applications: Postal<br>Clerk .....   | 343 |
| Credit Card Statement .....                             | 344 |
| Credit Cards: Minimum Payments .....                    | 346 |
| Career Skills and Applications: Credit<br>Manager ..... | 348 |
| Installment Loans .....                                 | 350 |
| Rounding and Estimation .....                           | 352 |

**17. Investing Money**

|                                          |     |
|------------------------------------------|-----|
| Life Insurance: Term/Straight Life ..... | 360 |
| Limited Payment Life/Endowment .....     | 363 |
| Career Skills and Applications:          |     |
| Insurance Clerk .....                    | 366 |
| Certificates of Deposit .....            | 368 |
| Buying and Selling Stock .....           | 370 |
| Career Skills and Applications:          |     |
| Securities Teller .....                  | 373 |
| Dividends/Annual Yield .....             | 374 |
| Bonds .....                              | 376 |
| Career Skills and Applications:          |     |
| Investment Counselor .....               | 378 |
| Rounding and Estimation .....            | 380 |

**18. Budgeting Money**

|                                 |     |
|---------------------------------|-----|
| Preparing a Budget .....        | 388 |
| Average Spending .....          | 390 |
| Career Skills and Applications: |     |
| Statistical Clerk .....         | 393 |
| Health Insurance .....          | 394 |
| Adjusting a Budget .....        | 396 |
| Career Skills and Applications: |     |
| Financial Counselor .....       | 398 |

|                               |     |
|-------------------------------|-----|
| Rounding and Estimation ..... | 400 |
|-------------------------------|-----|

**Appendix A. Introduction to Algebra**

|                                                    |     |
|----------------------------------------------------|-----|
| Squares and Square Roots .....                     | 410 |
| Using a Table of Squares and Square<br>Roots ..... | 411 |
| Adding Positive and Negative<br>Numbers .....      | 414 |
| Subtracting Positive and Negative<br>Numbers ..... | 416 |
| Multiplying Positive and Negative<br>Numbers ..... | 418 |
| Dividing Positive and Negative<br>Numbers .....    | 420 |
| Graphing Equations .....                           | 421 |

**Appendix B. Introduction to Computers**

|                                 |     |
|---------------------------------|-----|
| The Language of Computers ..... | 426 |
| Formulas .....                  | 428 |
| Program Statements .....        | 430 |
| Basic Programs in BASIC .....   | 432 |

127

| PUBLISHER                       | TITLE                                                           | COPYRIGHT |
|---------------------------------|-----------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>General Mathematics: Skills/Problem Solving/Applications</i> | 1982      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**GENERAL MATHEMATICS: SKILLS/PROBLEM SOLVING/APPLICATIONS** is designed to meet the wide range of interests and abilities usually found in a class of general mathematics students. The content is structured for three levels of ability. In addition, each chapter also contains optional content for these levels. Most chapters in this text contain a "Review of Related Skills" for the chapter, "Skills" lessons, "Problem Solving and Applications" lessons, "Career" lessons, "Calculator Exercises," a "Chapter Review," a "Chapter Test," and "Additional Practice." The integration of "Problem Solving and Applica-

tions" topics with "Skills" lessons illustrates for students both the need to achieve proficiency with computational skills and the need to improve competency with these skills. Each "Problem Solving and Applications" lesson focuses on a strategy for solving word problems. The exercises for these lessons first apply the problem-solving strategy in a nonverbal setting before applying it to word problems. "Career" lessons apply skills taught in the chapter to real-life problems related to career areas that present realistic career goals for general mathematics students.

| PUBLISHER                       | TITLE                                                           | COPYRIGHT |
|---------------------------------|-----------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>General Mathematics: Skills/Problem Solving/Applications</i> | 1982      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | **                                     |
| Using rational numbers                                        | H                  | **                                     |
| Using irrational numbers                                      | L                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | M                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | L                  | *                                      |
| Converting within a measurement system                        | M                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | M                  | *                                      |
| Determining theoretical and empirical probability         | M                  | **                                     |
| Determining measures of central tendency                  | M                  | **                                     |
| Interpreting data and making inferences                   | M                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  | *                                      |

|                                                                             |   |      |
|-----------------------------------------------------------------------------|---|------|
| <b>Measurement—Continued</b>                                                |   |      |
| Using formulas to determine measures                                        | H | **** |
| <b>C. Geometry</b>                                                          |   |      |
| Using geometric properties of plane and solid figures to determine measures | L | *    |
| Constructing standard straightedge compass figures                          | N | *    |
| Making models, scale drawings, orthographic projections                     | L | *    |
| Establishing congruence, similarity, symmetry                               | L | *    |
| Using coordinate geometry                                                   | L | *    |
| <b>D. Patterns and Functions</b>                                            |   |      |
| Determining and extending patterns                                          | N | *    |
| Graphing functions and investigating their properties                       | L | *    |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N | *  |
| Distinguishing between necessary and sufficient conditions                  | N | *  |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | *  |
| Evaluating algebraic expressions                                            | M | ** |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | H | *  |



| PUBLISHER                       | TITLE                                                           | COPYRIGHT |
|---------------------------------|-----------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>General Mathematics: Skills/Problem Solving/Applications</i> | 1982      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 | X                           |                                                     |                  |                   | X               |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
| X               |          |                | X                 | X                 | X                           | X                                                   | X                |                   | X               | X                    |
|                 | X        |                |                   |                   |                             | X                                                   |                  |                   | X               |                      |
|                 | X        |                | X                 | X                 | X                           |                                                     | X                |                   |                 |                      |
| X               |          |                | X                 | X                 | X                           | X                                                   | X                |                   | X               | X                    |
|                 | X        |                | X                 | X                 | X                           |                                                     |                  |                   | X               |                      |



|                                                                                                                                                    |   |   |   |   |   |   |   |  |  |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|--|--|---|---|
| <b>C. Use of Calculators</b>                                                                                                                       |   |   |   |   |   |   |   |  |  |   |   |
| Are they used:<br>To illustrate and/or develop concepts?                                                                                           |   | X |   | X |   |   |   |  |  | X |   |
| In lessons designed to teach how to use<br>calculators?                                                                                            |   |   | X |   |   |   |   |  |  | X |   |
| In "calculator" problems?                                                                                                                          |   |   | X |   |   |   |   |  |  |   |   |
| <b>D. Use of Concrete Materials</b>                                                                                                                |   |   |   |   |   |   |   |  |  |   |   |
| Are they used:<br>When new concepts are introduced or when<br>difficult problems are encountered?                                                  |   |   | X |   |   |   |   |  |  |   |   |
| Continuously as ideas are developed?                                                                                                               |   |   | X |   |   |   |   |  |  |   |   |
| Do students work with pictures, drawings, and<br>other representations?                                                                            | X |   |   | X | X | X | X |  |  | X | X |
| <b>E. Situational Lessons</b>                                                                                                                      |   |   |   |   |   |   |   |  |  |   |   |
| Are lessons included which begin with a de-<br>scription of an interesting, challenging situation<br>from which a number of activities can emerge? |   | X |   | X | X |   |   |  |  | X |   |
| Do the lessons provide for:<br>Several problems to be identified?                                                                                  |   | X |   | X | X |   |   |  |  | X |   |
| A variety of approaches to be used?                                                                                                                |   |   | X |   |   |   |   |  |  |   |   |
| Study over several class periods?                                                                                                                  |   |   | X |   |   |   |   |  |  |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                              |   |   |   |   |   |   |   |  |  |   |   |
| Are students:<br>Taught cooperative learning techniques?                                                                                           |   |   | X |   |   |   |   |  |  |   |   |
| Given problems which are specifically<br>designed to be solved in groups?                                                                          |   |   | X |   |   |   |   |  |  |   |   |

| PUBLISHER                       | TITLE                                                           | COPYRIGHT |
|---------------------------------|-----------------------------------------------------------------|-----------|
| Harcourt Brace Jovanovich, Inc. | <i>General Mathematics: Skills/Problem Solving/Applications</i> | 1982      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The teacher's resource book is a paperback publication, consisting of copy masters that are perforated and three-hole punched. This publication contains two forms of each chapter test, six cumulative tests, three sample competency tests, a 112-page workbook section that is correlated to the text, warm-up exercises for most skills lessons in chapters 1 through 14, and an answer section.

Teacher's edition: See item 2.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

##### 3. Description of teacher's resource materials

See the previous description of the teacher's resource book.

##### 4. Description of related materials available for sale

The test booklet is a 112-page, self-cover publication with perforated pages. It contains two forms of each chapter test, six cumulative tests (one for each of the six units), and three sample competency tests (one for chapters 1 through 11, one for chapters 1 through 14, and one for chapters 1 through 20).

The workbook is a 112-page paperback publication with perforated pages. The contents are correlated to the related pages in the student's edition, and it is accompanied by an annotated teacher's edition.



Harcourt Brace Jovanovich, Inc.

General Mathematics: Skills/Problem Solving/Applications

1982

## Part B. Table of Contents—Continued

## 11. Circles and Applications—(Continued)

|                                          |     |
|------------------------------------------|-----|
| Problem Solving and Applications:        |     |
| Measuring Angles .....                   | 228 |
| Area and Applications .....              | 230 |
| Career: Design .....                     | 232 |
| Volume and Applications: Cylinders ..... | 233 |
| Problem Solving and Applications:        |     |
| Cans and Cylinders .....                 | 235 |
| Volume and Applications: Cones .....     | 236 |
| Problem Solving and Applications:        |     |
| Spheres .....                            | 238 |

## 12. Equations/Ratio/Proportion

|                                                      |     |
|------------------------------------------------------|-----|
| Solving Equations: Addition/<br>Subtraction .....    | 248 |
| Problem Solving and Applications:                    |     |
| Net Pay .....                                        | 250 |
| Mortgage Loans .....                                 | 251 |
| Solving Equations: Multiplication/<br>Division ..... | 252 |
| Problem Solving and Applications:                    |     |
| Batting Average .....                                | 254 |
| Driving Range .....                                  | 255 |
| More on Solving Equations .....                      | 256 |
| Problem Solving and Applications:                    |     |
| Overtime Pay .....                                   | 258 |
| Renting a Car .....                                  | 259 |
| Ratio .....                                          | 260 |
| Problem Solving and Applications:                    |     |
| Energy Efficiency Ratio .....                        | 262 |
| Career: Photography .....                            | 263 |

|                                   |     |
|-----------------------------------|-----|
| Proportion .....                  | 264 |
| Problem Solving and Applications: |     |
| Scale Drawings .....              | 266 |
| Career: Drafting .....            | 267 |

## 13. Percent

|                                      |     |
|--------------------------------------|-----|
| Meaning of Percent .....             | 274 |
| Percents and Decimals .....          | 276 |
| Writing Fractions for Percents ..... | 278 |
| Writing Percents for Fractions ..... | 280 |
| Finding a Percent of a Number .....  | 282 |
| Problem Solving and Applications:    |     |
| Discount .....                       | 284 |
| Commission .....                     | 286 |
| Interest .....                       | 288 |
| Career: Banking .....                | 290 |
| Rounding and Estimation .....        | 291 |

## 14. More on Percent

|                                                      |     |
|------------------------------------------------------|-----|
| Finding What Percent a Number Is of<br>Another ..... | 300 |
| Problem Solving and Applications:                    |     |
| Interest Rate .....                                  | 302 |
| Percent of Increase or Decrease .....                | 303 |
| Problem Solving and Applications:                    |     |
| Sports .....                                         | 305 |
| Finding a Number Given a Percent .....               | 306 |
| Problem Solving and Applications:                    |     |
| Markup and Selling Price .....                       | 308 |
| Career: Health .....                                 | 309 |
| Review of Percent .....                              | 310 |

|                                               |     |
|-----------------------------------------------|-----|
| Problem Solving and Applications:             |     |
| Energy Costs .....                            | 313 |
| Review of Word Problems with<br>Percent ..... | 314 |
| Problem Solving and Applications:             |     |
| Minimum Wage .....                            | 317 |

## 15. Statistics

|                                                  |     |
|--------------------------------------------------|-----|
| The Mean and the Mode with<br>Applications ..... | 330 |
| The Median with Applications .....               | 332 |
| Career: Business .....                           | 334 |
| Listing Data .....                               | 336 |
| The Histogram with Applications .....            | 338 |
| Circle Graphs .....                              | 340 |

## 16. Probability

|                                   |     |
|-----------------------------------|-----|
| Probability .....                 | 348 |
| Probability and Tables .....      | 350 |
| Career: Quality Control .....     | 351 |
| Tree Diagrams .....               | 353 |
| Problem Solving and Applications: |     |
| Chances and Choices .....         | 355 |

## 17. Squares and Square Roots

|                                                |     |
|------------------------------------------------|-----|
| Squares and Square Roots .....                 | 366 |
| Using a Table of Squares/Square<br>Roots ..... | 368 |
| Right Triangle Rule and Applications .....     | 371 |
| Similar Triangles and Applications .....       | 374 |
| Career: Traffic Officer .....                  | 377 |
| Tangent Ratios and Applications .....          | 378 |

## 18. Integers: Addition/Subtraction

|                                      |     |
|--------------------------------------|-----|
| Positive and Negative Numbers .....  | 388 |
| Comparing Integers .....             | 390 |
| Adding Integers: Like Signs .....    | 392 |
| Adding Integers: Unlike Signs .....  | 394 |
| Subtracting Integers .....           | 396 |
| Problem Solving and Applications:    |     |
| Wind Chill .....                     | 398 |
| Career: Automobile Maintenance ..... | 399 |

## 19. Integers: Multiplication/Division

|                                          |     |
|------------------------------------------|-----|
| Multiplying Integers: Unlike Signs ..... | 406 |
| Multiplying Integers: Like Signs .....   | 408 |
| Dividing Integers .....                  | 410 |
| Rational Numbers .....                   | 412 |
| Problem Solving and Applications:        |     |
| Conserving Energy .....                  | 414 |
| Career: Business .....                   | 415 |

## 20. Graphing and Equations

|                                   |     |
|-----------------------------------|-----|
| Graphing Ordered Pairs .....      | 422 |
| Problem Solving and Applications: |     |
| Latitude and Longitude .....      | 424 |
| Career: Travel Planning .....     | 425 |
| Graphing Equations .....          | 426 |
| Equations and Integers:           |     |
| Addition/Subtraction .....        | 429 |
| Multiplication/Division .....     | 431 |
| Two Operations .....              | 433 |

| PUBLISHER               | TITLE                            | COPYRIGHT |
|-------------------------|----------------------------------|-----------|
| D. C. Heath and Company | <i>Heath General Mathematics</i> | 1985      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**H**EATH GENERAL MATHEMATICS is a remedial course for students who have not mastered junior high school mathematics. The content is organized in a clear and careful development of the basic number skills to ensure students' success. Frequent cumulative practice

maintains these skills. Every lesson is built on a high-interest theme that makes the mathematics relevant to the students' world. Problem-solving skills are developed throughout the course, with special lessons on problem solving and the incorporation of word problems into every lesson.



| PUBLISHER               | TITLE                     | COPYRIGHT |
|-------------------------|---------------------------|-----------|
| D. C. Heath and Company | Heath General Mathematics | 1985      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | **                                     |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | H                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | M                  | **                                     |
| Determining theoretical and empirical probability         | M                  | **                                     |
| Determining measures of central tendency                  | M                  | *                                      |
| Interpreting data and making inferences                   | M                  | **                                     |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | L                  | *                                      |



|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | *  |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | M | *  |
| Constructing standard straightedge compass figures                          | N |    |
| Making models, scale drawings, orthographic projections                     | N |    |
| Establishing congruence, similarity, symmetry                               | M | ** |
| Using coordinate geometry                                                   | L | *  |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | L | *  |
| Graphing functions and investigating their properties                       | N |    |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | L | *  |
| Distinguishing between necessary and sufficient conditions                  | L | *  |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | L | *  |
| Evaluating algebraic expressions                                            | L | *  |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | H | ** |

| PUBLISHER               | TITLE                     | COPYRIGHT |
|-------------------------|---------------------------|-----------|
| D. C. Heath and Company | Heath General Mathematics | 1985      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                |                   | X                 | X                           | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 | X                           | X                                                   |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   | X <sup>1</sup>    |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:  
With computational problems?

With calculator problems?

<sup>1</sup>Specific techniques of estimation are presented in the teacher's edition.

|                                                                                                                                                    |   |   |   |   |   |   |   |   |   |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| <b>C. Use of Calculators</b>                                                                                                                       |   |   |   |   |   |   |   |   |   |   |   |
| Are they used:<br>To illustrate and/or develop concepts?                                                                                           |   |   | X |   |   |   |   |   |   |   |   |
| In lessons designed to teach how to use<br>calculators?                                                                                            |   |   | X |   |   |   |   |   |   |   |   |
| In "calculator" problems?                                                                                                                          |   |   | X |   |   |   |   |   |   |   |   |
| <b>D. Use of Concrete Materials</b>                                                                                                                |   |   |   |   |   |   |   |   |   |   |   |
| Are they used:<br>When new concepts are introduced or when<br>difficult problems are encountered?                                                  |   | X |   |   | X | X | X |   |   |   |   |
| Continuously as ideas are developed?                                                                                                               |   |   | X |   |   |   |   |   |   |   |   |
| Do students work with pictures, drawings, and<br>other representations?                                                                            | X |   |   | X | X | X | X | X | X | X | X |
| <b>E. Situational Lessons</b>                                                                                                                      |   |   |   |   |   |   |   |   |   |   |   |
| Are lessons included which begin with a de-<br>scription of an interesting, challenging situation<br>from which a number of activities can emerge? |   |   | X |   |   |   |   |   |   |   |   |
| Do the lessons provide for:<br>Several problems to be identified?                                                                                  |   |   | X |   |   |   |   |   |   |   |   |
| A variety of approaches to be used?                                                                                                                |   |   | X |   |   |   |   |   |   |   |   |
| Study over several class periods?                                                                                                                  |   |   | X |   |   |   |   |   |   |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                              |   |   |   |   |   |   |   |   |   |   |   |
| Are students:<br>Taught cooperative learning techniques?                                                                                           |   |   | X |   |   |   |   |   |   |   |   |
| Given problems which are specifically<br>designed to be solved in groups?                                                                          |   |   | X |   |   |   |   |   |   |   |   |

| PUBLISHER               | TITLE                            | COPYRIGHT |
|-------------------------|----------------------------------|-----------|
| D. C. Heath and Company | <i>Heath General Mathematics</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

One teacher's edition and one set of copymasters are supplied free with the purchase of 25 students' editions.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☐ Answers/placement

Extensive teaching suggestions, reproduced work sheets, and reproduced tests are provided in the wide margins beside the pupils' pages shown on the teacher's edition.

Answers are overprinted in red on the pupils' pages shown in the teacher's edition.

##### 3. Description of teacher's resource materials

Copymasters contain 336 blackline masters, consisting of tests, 108 pages; visual aids, 44 pages; and work sheets, 184 pages.

##### 4. Description of related materials available for sale

The tests contained in the copymasters are also available as duplicating masters.

The visual aids contained in the copymasters are also available as overhead transparencies.

The work sheets contained in the copymasters are also available as duplicating masters and as workbooks with a teacher's edition of the workbook.

| PUBLISHER               | TITLE                            | COPYRIGHT |
|-------------------------|----------------------------------|-----------|
| D. C. Heath and Company | <i>Heath General Mathematics</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### 1. Adding Whole Numbers and Decimals

|                                          |    |
|------------------------------------------|----|
| Reading Standard Numerals .....          | 2  |
| Writing Standard Numerals in Words ..... | 4  |
| Adding Whole Numbers .....               | 6  |
| Adding Larger Numbers .....              | 8  |
| Rounding Whole Numbers .....             | 12 |
| Estimating Sums .....                    | 14 |
| Reading Decimals .....                   | 16 |
| Rounding Decimals .....                  | 20 |
| Adding Decimals .....                    | 22 |
| More on Adding Decimals .....            | 24 |

##### 2. Subtracting Whole Numbers and Decimals

|                                                    |    |
|----------------------------------------------------|----|
| Comparing Whole Numbers .....                      | 32 |
| Subtracting Two- and Three-Digit<br>Numbers .....  | 34 |
| Subtracting Three- and Four-Digit<br>Numbers ..... | 36 |
| Subtracting Larger Numbers .....                   | 38 |
| Comparing Decimals .....                           | 42 |
| Subtracting Decimals .....                         | 44 |
| More on Subtracting Decimals .....                 | 46 |

##### 3. Multiplying Whole Numbers and Decimals

|                                                        |    |
|--------------------------------------------------------|----|
| Multiplying by Multiples of 10, 100,<br>or 1,000 ..... | 54 |
| Multiplying by a One-Digit Number .....                | 56 |
| Multiplying by a Two-Digit Number .....                | 58 |
| Multiplying Larger Numbers .....                       | 60 |
| Multiplying Decimals .....                             | 64 |
| Simplifying Expressions .....                          | 66 |
| Multiplying Decimals by 10, 100, or 1,000 ...          | 68 |

##### 4. Dividing Whole Numbers and Decimals

|                                             |      |
|---------------------------------------------|------|
| Dividing by a One-Digit Number .....        | 76   |
| More on Dividing by a One-Digit Number ...  | 78   |
| Dividing by a Two-Digit Number .....        | 80   |
| Dividing by a Three-Digit Number .....      | 84   |
| Order of Operations .....                   | 86   |
| Dividing a Decimal by a Whole Number .....  | 88   |
| Dividing by 10, 100, or 1,000 .....         | 92   |
| Dividing a Decimal by a Decimal .....       | 94   |
| More on Dividing a Decimal by a Decimal ... | 96   |
| First-Quarter Test .....                    | 102A |

##### 5. Graphs and Statistics

|                                                             |     |
|-------------------------------------------------------------|-----|
| Organizing Data .....                                       | 104 |
| Using Bar Graphs .....                                      | 106 |
| Using Line Graphs .....                                     | 108 |
| Reading Circle Graphs and Picture<br>Graphs .....           | 110 |
| Analyzing Data—Finding the Mean .....                       | 114 |
| Analyzing Data—Finding the Median, Mode,<br>and Range ..... | 116 |
| Presenting Data—Constructing Graphs .....                   | 118 |

##### 6. Fractions, Mixed Numbers, and Decimals

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| Equivalent Fractions .....                                      | 126 |
| Writing Fractions in Lowest Terms .....                         | 128 |
| Least Common Denominator .....                                  | 130 |
| Comparing Fractions .....                                       | 132 |
| Writing Whole Numbers and Mixed Numbers<br>as Fractions .....   | 136 |
| Writing Fractions as Whole Numbers or<br>as Mixed Numbers ..... | 138 |

|                                                               |     |
|---------------------------------------------------------------|-----|
| Writing Fractions and Mixed Numbers<br>in Simplest Form ..... | 140 |
| Writing Quotients as Mixed Numbers .....                      | 142 |
| Writing Fractions and Mixed Numbers as<br>Decimals .....      | 146 |
| Writing Decimals as Fractions or Mixed<br>Numbers .....       | 148 |

##### 7. Adding and Subtracting Fractions and Mixed Numbers

|                                                            |     |
|------------------------------------------------------------|-----|
| Adding Fractions with Common<br>Denominators .....         | 156 |
| Adding Fractions with Different<br>Denominators .....      | 158 |
| Adding Mixed Numbers .....                                 | 160 |
| Subtracting Fractions with Common<br>Denominators .....    | 164 |
| Subtracting Fractions with Different<br>Denominators ..... | 166 |
| Subtracting Mixed Numbers Without<br>Regrouping .....      | 168 |
| Subtracting Mixed Numbers with<br>Regrouping .....         | 170 |

##### 8. Multiplying and Dividing Fractions and Mixed Numbers

|                                           |      |
|-------------------------------------------|------|
| Multiplying Fractions .....               | 178  |
| A Fraction of a Whole Number .....        | 180  |
| Multiplying Mixed Numbers .....           | 182  |
| More on a Fraction of a Whole Number .... | 184  |
| Dividing Fractions .....                  | 188  |
| Dividing Mixed Numbers .....              | 190  |
| Second-Quarter Test .....                 | 196A |



D. C. Heath and Company

*Heath General Mathematics*

1985

**Part B. Table of Contents—Continued****9. Measurement**

|                                           |     |
|-------------------------------------------|-----|
| Using a Metric Ruler .....                | 198 |
| Metric Units of Length .....              | 200 |
| Changing Units in the Metric System ..... | 202 |
| Liquid Volume—Metric System .....         | 204 |
| Weight—Metric System .....                | 206 |
| Length—Customary Units .....              | 210 |
| Changing Units of Length—Customary .....  | 212 |
| Liquid Volume—Customary Units .....       | 214 |
| Weight—Customary Units .....              | 216 |
| Computing with Customary Units .....      | 218 |
| Cumulative Skill Practice .....           | 220 |

**10. Ratio and Proportion**

|                            |     |
|----------------------------|-----|
| Ratios .....               | 226 |
| Proportions .....          | 228 |
| Solving Proportions .....  | 230 |
| Rates .....                | 232 |
| Scale Drawings .....       | 236 |
| Similar Figures .....      | 238 |
| Indirect Measurement ..... | 240 |

**11. Percent**

|                                                     |     |
|-----------------------------------------------------|-----|
| Changing a Percent to a Fraction .....              | 248 |
| Changing a Fraction to a Percent .....              | 250 |
| Percents and Decimals .....                         | 252 |
| Finding a Percent of a Number .....                 | 256 |
| More on Finding a Percent of a Number .....         | 258 |
| Finding the Number When a Percent Is<br>Known ..... | 260 |
| More on Percent .....                               | 262 |

**12. Consumer Mathematics**

|                      |     |
|----------------------|-----|
| Earning Money .....  | 270 |
| Buying on Sale ..... | 272 |

|                          |      |
|--------------------------|------|
| Comparison Buying .....  | 274  |
| Bargain Buying .....     | 276  |
| Checking Accounts .....  | 280  |
| Savings Accounts .....   | 282  |
| Borrowing Money .....    | 284  |
| Paying Bills .....       | 286  |
| Third-Quarter Test ..... | 292A |

**13. Geometry—Perimeter and Area**

|                                        |     |
|----------------------------------------|-----|
| Measuring and Classifying Angles ..... | 294 |
| Perpendicular and Parallel Lines ..... | 296 |
| Polygons .....                         | 298 |
| Perimeter .....                        | 300 |
| Circumference .....                    | 302 |
| Area—Squares and Rectangles .....      | 306 |
| Area—Parallelograms .....              | 308 |
| Area—Triangles .....                   | 310 |
| Area—Circles .....                     | 312 |

**14. Surface Area and Volume**

|                                                    |     |
|----------------------------------------------------|-----|
| Space Figures .....                                | 320 |
| More on Space Figures .....                        | 322 |
| Surface Area—Rectangular Prisms and<br>Cubes ..... | 324 |
| Volume—Rectangular Prisms and Cubes .....          | 328 |
| Volume—Cylinders .....                             | 330 |
| Volume—Pyramids and Cones .....                    | 332 |

**15. Probability**

|                                       |     |
|---------------------------------------|-----|
| A Basic Counting Principle .....      | 340 |
| Permutations .....                    | 342 |
| Probability .....                     | 344 |
| Sample Spaces .....                   | 346 |
| Probability—More Than One Event ..... | 350 |
| Odds .....                            | 352 |
| Expectation .....                     | 354 |

**16. Integers**

|                                       |     |
|---------------------------------------|-----|
| Ordering and Comparing Integers ..... | 362 |
| Adding Integers .....                 | 364 |
| Subtracting Integers .....            | 366 |
| Multiplying Integers .....            | 370 |
| Dividing Integers .....               | 372 |
| Graphing Ordered Pairs .....          | 374 |

**17. Algebra**

|                                        |      |
|----------------------------------------|------|
| Writing Expressions .....              | 382  |
| Evaluating Expressions .....           | 384  |
| Solving Addition Equations .....       | 386  |
| Solving Subtraction Equations .....    | 388  |
| Solving Multiplication Equations ..... | 392  |
| Solving Division Equations .....       | 394  |
| Solving Two-Step Equations .....       | 396  |
| Fourth Quarter Test .....              | 402A |
| Final Test .....                       | 402C |
| Skill Test .....                       | 404  |
| Extra Practice .....                   | 412  |
| Extra Problem Solving .....            | 444  |
| Glossary .....                         | 461  |
| Symbols and Formulas .....             | 468  |
| Index .....                            | 469  |

In addition to the topics listed previously,  
each chapter contains the following activities:

- Cumulative Skill Practice
- Problem Solving
- Chapter Review
- Chapter Test
- Cumulative Test



| PUBLISHER                  | TITLE                           | COPYRIGHT |
|----------------------------|---------------------------------|-----------|
| Holt, Rinehart and Winston | <i>Holt General Mathematics</i> | 1982      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**H**OLT GENERAL MATHEMATICS is a complete program designed for any student who requires instruction in basic skills and a comprehensive survey of fundamental topics in mathematics.

The lesson format presents a step-by-step development of concepts and skills through use of worked-out examples that guide students through the solution process.

The exercise set is structured according to the student's skill and ability levels. It includes practical applications.

A section entitled "Extra Practice" is provided in the back of the book for students who need additional reteaching of skills. In a section of optional activities entitled "Special Topics," sections on "Algebra" and "Computer Literacy" are also offered.

| PUBLISHER                  | TITLE                           | COPYRIGHT |
|----------------------------|---------------------------------|-----------|
| Holt, Rinehart and Winston | <i>Holt General Mathematics</i> | 1982      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | **                                     |
| Using rational numbers                                        | H                  | **                                     |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | M                  | **                                     |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | H                  | **                                     |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | M                  | **                                     |
| Determining measures of central tendency                  | L                  | *                                      |
| Interpreting data and making inferences                   | L                  | **                                     |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Measurement—Continued</b>                                                |   |     |
| Using formulas to determine measures                                        | H | **  |
| <b>C. Geometry</b>                                                          |   |     |
| Using geometric properties of plane and solid figures to determine measures | H | *** |
| Constructing standard straightedge compass figures                          | M | **  |
| Making models, scale drawings, orthographic projections                     | L | **  |
| Establishing congruence, similarity, symmetry                               | M | **  |
| Using coordinate geometry                                                   | L | *   |
| <b>D. Patterns and Functions</b>                                            |   |     |
| Determining and extending patterns                                          | N |     |
| Graphing functions and investigating their properties                       | N |     |

|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Logic—Continued</b>                                                      |   |     |
| Using deductive reasoning to reach conclusions                              | N |     |
| Distinguishing between necessary and sufficient conditions                  | N |     |
| <b>G. Algebra</b>                                                           |   |     |
| Creating mathematical models to represent situations                        | M | **  |
| Evaluating algebraic expressions                                            | L | *   |
| Solving equations and inequalities                                          | H | **  |
| Solving problems involving direct and inverse variation, including percents | M | *** |

| PUBLISHER                  | TITLE                    | COPYRIGHT |
|----------------------------|--------------------------|-----------|
| Holt, Rinehart and Winston | Holt General Mathematics | 1982      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             |                                                     | X                |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   | X                |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |   |  |   |   |   |  |   |   |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|--|---|---|---|--|---|---|--|--|--|
| <b>C. Use of Calculators</b>                                                                                                               |   |  |   |   |   |  |   |   |  |  |  |
| Are they used:                                                                                                                             |   |  |   |   |   |  |   |   |  |  |  |
| To illustrate and/or develop concepts?                                                                                                     |   |  | X |   |   |  |   |   |  |  |  |
| In lessons designed to teach how to use calculators?                                                                                       |   |  | X |   |   |  |   |   |  |  |  |
| In "calculator" problems?                                                                                                                  |   |  | X |   |   |  |   |   |  |  |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |  |   |   |   |  |   |   |  |  |  |
| Are they used:                                                                                                                             |   |  |   |   |   |  |   |   |  |  |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |  | X |   |   |  |   |   |  |  |  |
| Continuously as ideas are developed?                                                                                                       |   |  | X |   |   |  |   |   |  |  |  |
| Do students work with pictures, drawings, and other representations?                                                                       | X |  |   | X | X |  | X | X |  |  |  |
| <b>E. Situational Lessons</b>                                                                                                              |   |  |   |   |   |  |   |   |  |  |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |  | X |   |   |  |   |   |  |  |  |
| Do the lessons provide for:                                                                                                                |   |  |   |   |   |  |   |   |  |  |  |
| Several problems to be identified?                                                                                                         |   |  | X |   |   |  |   |   |  |  |  |
| A variety of approaches to be used?                                                                                                        |   |  | X |   |   |  |   |   |  |  |  |
| Study over several class periods?                                                                                                          |   |  | X |   |   |  |   |   |  |  |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |  |   |   |   |  |   |   |  |  |  |
| Are students:                                                                                                                              |   |  |   |   |   |  |   |   |  |  |  |
| Taught cooperative learning techniques?                                                                                                    |   |  | X |   |   |  |   |   |  |  |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |  | X |   |   |  |   |   |  |  |  |

| PUBLISHER                  | TITLE                           | COPYRIGHT |
|----------------------------|---------------------------------|-----------|
| Holt, Rinehart and Winston | <i>Holt General Mathematics</i> | 1982      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

On request, a teacher's edition is supplied free for every 25 students' textbooks.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☐ Answers/placement

The teacher's edition includes chapter-by-chapter commentary, teaching suggestions, and all answers.

##### 3. Description of teacher's resource materials

See the related teacher's materials listed below.

##### 4. Description of related materials available for sale

*Skillmasters* contains a set of 48 duplicating masters. These masters contain alternative "Self-Checks" for the "Skills Development" section, as well as diagnostic checkups for chapters 1 through 10. Activity-oriented practice and enrichment activities are also included.

*Testmasters* contains a set of 46 duplicating masters. They provide multiple-choice format tests for each unit of the "Skills Development" section, a test for each of the ten chapters, and a multiple-choice "Problem Solving" test. Also included are additional "Progress Tests" and a "Final Test."



| PUBLISHER                  | TITLE                    | COPYRIGHT |
|----------------------------|--------------------------|-----------|
| Holt, Rinehart and Winston | Holt General Mathematics | 1982      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### Skills Development

###### A. Whole Numbers

|                  |    |
|------------------|----|
| Pretest (Part 1) | 1  |
| Place Value      | 2  |
| Compare/Order    | 6  |
| Round            | 8  |
| Add              | 11 |
| Subtract         | 14 |
| Pretest (Part 2) | 17 |
| Bar Graph        | 18 |
| Multiply         | 20 |
| Multiply by Tens | 23 |
| More Multiplying | 25 |
| Classified Ads   | 28 |
| Divide           | 30 |
| Divide by Tens   | 33 |
| More Dividing    | 35 |
| Estimation       | 38 |

###### B. Fractions

|                         |    |
|-------------------------|----|
| Pretest (Part 1)        | 43 |
| Fractions/Mixed Numbers | 44 |
| Higher Terms            | 48 |
| LCD                     | 50 |
| Compare/Order           | 52 |
| Add                     | 54 |
| More Adding             | 58 |
| Circle Graph            | 62 |
| Pretest (Part 2)        | 63 |
| Subtract                | 64 |
| More Subtracting        | 68 |
| Multiply                | 72 |
| More Multiplying        | 75 |
| Stocks                  | 78 |
| Divide                  | 80 |

###### C. Decimals

|                  |    |
|------------------|----|
| Pretest (Part 1) | 88 |
|------------------|----|

|                       |     |
|-----------------------|-----|
| Place Value           | 89  |
| Compare/Order         | 92  |
| Round                 | 94  |
| Add                   | 97  |
| Pretest (Part 2)      | 102 |
| Subtract              | 103 |
| Multiply              | 107 |
| Grocery Shopping      | 112 |
| Multiply by Tens      | 113 |
| Estimation            | 116 |
| Divide                | 117 |
| More Dividing         | 121 |
| Divide by Tens        | 126 |
| Going Out for Lunch   | 129 |
| Decimal as a Fraction | 130 |
| Fraction as a Decimal | 132 |
| Line Graph            | 136 |

###### 1. Measurement

|                                                          |     |
|----------------------------------------------------------|-----|
| Preskills Test                                           | 143 |
| Introduction to the Metric System                        | 144 |
| Changing Between Metric Units of Length                  | 148 |
| Problem Solving: Traveling by Air                        | 152 |
| Changing Between Metric Units of Mass or Capacity        | 154 |
| Measuring Temperature with Metric Units                  | 157 |
| Problem Solving: Bus and Rail Travel (Double-Line Graph) | 158 |
| Changing Between Customary Units of Length               | 160 |
| Changing Between Customary Units of Weight or Capacity   | 162 |
| Problem Solving: Service Occupations (Career)            | 164 |
| Computing with Customary Measures                        | 165 |
| Time and Time Zones                                      | 167 |

|                                      |     |
|--------------------------------------|-----|
| Problem Solving: Planning a Vacation | 170 |
| Problem Solving: Traveling by Train  | 172 |

###### 2. Algebra

|                                                         |     |
|---------------------------------------------------------|-----|
| Preskills Test                                          | 177 |
| The Language of Algebra                                 | 178 |
| Simplifying Numerical Expressions                       | 181 |
| Problem Solving: Utility Meter Reading                  | 184 |
| Evaluating Algebraic Expressions                        | 186 |
| Problem Solving: Utility Bills                          | 189 |
| Solving Equations                                       | 190 |
| Problem Solving: Conserving Electricity                 | 192 |
| Solving More Equations                                  | 193 |
| Problem Solving: Conserving Gasoline (Double-Bar Graph) | 195 |
| Solving Two-Step Equations                              | 197 |
| Solving Formulas                                        | 199 |
| Problem Solving: Scientific Occupations (Career)        | 201 |

###### 3. Proportions

|                                                                      |     |
|----------------------------------------------------------------------|-----|
| Preskills Test                                                       | 205 |
| Ratios                                                               | 206 |
| Problem Solving: Average U.S. Retail Food Prices (Double-Line Graph) | 209 |
| Equivalent Ratios                                                    | 210 |
| Solving Proportions                                                  | 213 |
| Problem Solving: Unit Pricing and Comparison Shopping                | 215 |
| Solving Problems Using Proportions                                   | 217 |
| Problem Solving: Health Occupations (Career)                         | 219 |
| Problem Solving: Counting Calories                                   | 220 |
| Scale Drawings                                                       | 222 |
| Problem Solving: Balanced Diet and Food Costs                        | 224 |

###### 4. Percents

|                                                                |     |
|----------------------------------------------------------------|-----|
| Preskills Test                                                 | 228 |
| Fractions and Percents                                         | 229 |
| Decimals and Percents                                          | 232 |
| Finding a Percent of a Number                                  | 236 |
| Problem Solving: Discount Sales                                | 239 |
| Problem Solving: Buy Now, Pay Later                            | 241 |
| Finding What Percent One Number Is of Another                  | 243 |
| Problem Solving: Where Does the Money Go? (Circle Graph)       | 246 |
| Problem Solving: Sales Occupations (Career)                    | 247 |
| Finding a Number When a Percent of It Is Known                 | 248 |
| Problem Solving: Credit Cards                                  | 251 |
| Using Proportions to Solve Percent Problems                    | 252 |
| Problem Solving: Price Changes—Percent of Increase or Decrease | 257 |
| Problem Solving: Consumer Price Index                          | 258 |

###### 5. Graphs

|                                                           |     |
|-----------------------------------------------------------|-----|
| Preskills Test                                            | 263 |
| Constructing Bar Graphs                                   | 264 |
| Problem Solving: Auto Buying                              | 267 |
| Constructing Pictographs                                  | 269 |
| Problem Solving: Auto Repairs and Upkeep                  | 271 |
| Constructing Line Graphs                                  | 272 |
| Problem Solving: How Far? How Fast? (Multiple-Line Graph) | 275 |
| Constructing Circle Graphs                                | 277 |
| Problem Solving: Auto Maintenance                         | 279 |
| Graphing Ordered Pairs and Lines                          | 280 |
| Problem Solving: Transportation Occupations (Career)      | 282 |

Holt, Rinehart and Winston

Holt General Mathematics

1982

## Part B. Table of Contents—Continued

## 6. Statistics and Probability

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| Preskills Test .....                                              | 286 |
| Frequency Tables, Histograms, and<br>Frequency Polygons .....     | 287 |
| Measures of Central Tendency and<br>Dispersion .....              | 290 |
| Problem Solving: Education vs. Income<br>(Double-Bar Graph) ..... | 295 |
| Determining Probability .....                                     | 296 |
| Problem Solving: College Costs .....                              | 301 |
| Using Probability to Make<br>Predictions .....                    | 303 |
| Problem Solving: School Enrollment .....                          | 304 |
| Determining Odds .....                                            | 306 |
| Problem Solving: Class Size .....                                 | 310 |
| Compound Probability .....                                        | 312 |
| Problem Solving: Education<br>Occupations (Career) .....          | 314 |

## 7. Geometry

|                                                                        |     |
|------------------------------------------------------------------------|-----|
| Preskills Test .....                                                   | 318 |
| Identifying Points, Lines, Rays,<br>and Angles .....                   | 319 |
| Constructing Congruent Line Segments<br>and Angles .....               | 324 |
| Problem Solving: Loans and Simple<br>Interest .....                    | 329 |
| Identifying Lines and Transversals .....                               | 331 |
| Constructing Perpendicular and<br>Parallel Lines .....                 | 334 |
| Problem Solving: Savings Accounts<br>and Compound Interest .....       | 338 |
| Problem Solving: Rate of Personal<br>Savings (Single-Line Graph) ..... | 340 |
| Identifying Polygons .....                                             | 341 |
| Sum of Angles of a Polygon .....                                       | 345 |
| Problem Solving: Checking Accounts .....                               | 348 |
| Identifying Triangles .....                                            | 350 |
| Problem Solving: Bonds .....                                           | 353 |
| Identifying and Constructing Congruent<br>Triangles .....              | 354 |

|                                                       |     |
|-------------------------------------------------------|-----|
| Identifying Quadrilaterals .....                      | 358 |
| Problem Solving: Office Occupations<br>(Career) ..... | 361 |
| Progress Tests and Chapters 1—7 .....                 | 364 |

## 8. Geometry: Plane Figures

|                                                             |     |
|-------------------------------------------------------------|-----|
| Preskills Test .....                                        | 366 |
| Finding Perimeter .....                                     | 367 |
| Problem Solving: Buying a Home<br>(Double-Bar Graph) .....  | 371 |
| Measures of Area in the Metric<br>System .....              | 373 |
| Finding Area .....                                          | 376 |
| More Area .....                                             | 380 |
| Problem Solving: Building a Garage .....                    | 384 |
| Circumference and Area of a Circle .....                    | 385 |
| Similar Triangles .....                                     | 390 |
| Problem Solving: Renting an<br>Apartment .....              | 394 |
| Problem Solving: Furnishing an<br>Apartment .....           | 396 |
| Using Squares and Square Roots .....                        | 398 |
| The Pythagorean Theorem .....                               | 401 |
| Problem Solving: Construction<br>Occupations (Career) ..... | 405 |
| Right Triangle Trigonometry .....                           | 406 |

## 9. Geometry: Solid Figures

|                                                         |     |
|---------------------------------------------------------|-----|
| Preskills Test .....                                    | 415 |
| Identifying Solid Figures .....                         | 416 |
| Finding Surface Area of Rectangular<br>Prisms .....     | 419 |
| Problem Solving: Venn Diagrams .....                    | 423 |
| Finding Surface Area of Cylinders<br>and Spheres .....  | 425 |
| Problem Solving: Using a Flowchart .....                | 429 |
| Measures of Volume in the Metric<br>System .....        | 431 |
| Problem Solving: Computer<br>Occupations (Career) ..... | 433 |

|                                                                 |     |
|-----------------------------------------------------------------|-----|
| Finding Volume of Prisms and<br>Pyramids .....                  | 434 |
| Finding Volume of Cylinders, Cones,<br>and Spheres .....        | 438 |
| Problem Solving: Budget Allocations<br>(Triple-Bar Graph) ..... | 442 |

## 10. Rational Numbers

|                                                               |     |
|---------------------------------------------------------------|-----|
| Preskills Test .....                                          | 447 |
| Introduction to Integers .....                                | 448 |
| Problem Solving: Where the Money<br>Goes (Circle Graph) ..... | 451 |
| Adding Integers .....                                         | 452 |
| Problem Solving: Salary Records .....                         | 455 |
| Subtracting Integers .....                                    | 456 |
| Problem Solving: What the Work Day<br>Pays For .....          | 458 |
| Multiplying Integers .....                                    | 459 |
| Problem Solving: Hourly Wage vs.<br>Piecework .....           | 462 |
| Dividing Integers .....                                       | 463 |
| Problem Solving: Working on a<br>Commission .....             | 465 |
| Rational Numbers .....                                        | 466 |
| Problem Solving: Paying Federal<br>Taxes .....                | 469 |
| Operations with Rational Numbers .....                        | 471 |
| Problem Solving: Industrial<br>Occupations (Career) .....     | 476 |
| Evaluating Expressions Using Rational<br>Numbers .....        | 477 |
| Final Progress Test .....                                     | 481 |

## Special Topics

## Numeration and Number Theory

|                                                           |     |
|-----------------------------------------------------------|-----|
| Expanded Notation of Whole Numbers<br>and Decimals .....  | 483 |
| Prime Factorization .....                                 | 485 |
| Greatest Common Factor and Least<br>Common Multiple ..... | 486 |

|                                          |     |
|------------------------------------------|-----|
| Scientific Notation .....                | 488 |
| Terminating and Repeating Decimals ..... | 490 |

## Algebra

|                                                            |     |
|------------------------------------------------------------|-----|
| One- and Two-Step Equations in One<br>Variable .....       | 492 |
| Solving Equations That Require<br>Simplifying Terms .....  | 495 |
| Solving More Equations with Like<br>Terms .....            | 496 |
| Solving Equations with the Variable on<br>Both Sides ..... | 499 |
| Graphing Equations in One Variable .....                   | 501 |
| Solving Inequalities .....                                 | 503 |
| Graphing Inequalities .....                                | 506 |

## Computer Literacy

|                                      |     |
|--------------------------------------|-----|
| Computer Applications .....          | 509 |
| How Computers Work .....             | 510 |
| Arithmetic Operations in BASIC ..... | 512 |
| Program Statements in BASIC .....    | 513 |

|                      |         |
|----------------------|---------|
| Extra Practice ..... | 514—541 |
|----------------------|---------|

|                |         |
|----------------|---------|
| Glossary ..... | 542—545 |
|----------------|---------|

|                        |         |
|------------------------|---------|
| Selected Answers ..... | 546—555 |
|------------------------|---------|

|             |         |
|-------------|---------|
| Index ..... | 558—564 |
|-------------|---------|

Each chapter from Chapter 1, "Measurement," through Chapter 10, "Rational Numbers," contains sections entitled "Maintenance Skills Review," "Calculator Activity," and "Reading in Math." A "Unit Review" and a "Unit Test" follow each of the units A, B, and C. A "Chapter Review" and a "Chapter Test" follow each chapter.

| PUBLISHER                | TITLE                                                       | COPYRIGHT |
|--------------------------|-------------------------------------------------------------|-----------|
| Houghton Mifflin Company | <i>Fundamentals of Mathematics: Skills and Applications</i> | 1986      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**F**UNDAMENTALS OF MATHEMATICS: SKILLS AND APPLICATIONS is a general mathematics text that provides comprehensive coverage of all topics normally taught in a ninth grade general mathematics course. The text provides coverage of whole numbers, fractions, decimals and percents, geometry, and measurement and also includes prealgebra concepts.

Four-color art highlights each section of the text. The unique organization is built around an instructional model in which each unit begins with a unit preview that helps teachers determine which skills have been previously mastered. This model is followed by a weekly plan, which moves from skill to applications to problem-solving lessons. These lessons are then followed by reviews and opportunities for evaluation.

| PUBLISHER                | TITLE                                                       | COPYRIGHT |
|--------------------------|-------------------------------------------------------------|-----------|
| Houghton Mifflin Company | <i>Fundamentals of Mathematics: Skills and Applications</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | ***                                    |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | M                  | **                                     |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | L                  | *                                      |
| Determining measures of central tendency                  | L                  | *                                      |
| Interpreting data and making inferences                   | N                  |                                        |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Measurement—Continued</b>                                                |   |   |
| Using formulas to determine measures                                        | M | * |
| <b>C. Geometry</b>                                                          |   |   |
| Using geometric properties of plane and solid figures to determine measures | L | * |
| Constructing standard straightedge compass figures                          | N |   |
| Making models, scale drawings, orthographic projections                     | N |   |
| Establishing congruence, similarity, symmetry                               | N |   |
| Using coordinate geometry                                                   | M | * |
| <b>D. Patterns and Functions</b>                                            |   |   |
| Determining and extending patterns                                          | N |   |
| Graphing functions and investigating their properties                       | N |   |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | ** |
| Evaluating algebraic expressions                                            | M | ** |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | N |    |

| PUBLISHER                | TITLE                                                       | COPYRIGHT |
|--------------------------|-------------------------------------------------------------|-----------|
| Houghton Mifflin Company | <i>Fundamentals of Mathematics: Skills and Applications</i> | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 | X                 |                             |                                                     |                  |                   | X               |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |



|                                                                                                                                            |  |   |   |   |   |  |   |   |  |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|---|---|--|---|---|--|---|---|
| <b>C. Use of Calculators</b>                                                                                                               |  |   |   |   |   |  |   |   |  |   |   |
| Are they used:                                                                                                                             |  |   |   |   |   |  |   |   |  |   |   |
| To illustrate and/or develop concepts?                                                                                                     |  | X |   | X | X |  |   | X |  | X |   |
| In lessons designed to teach how to use calculators?                                                                                       |  | X |   | X | X |  |   | X |  | X |   |
| In "calculator" problems?                                                                                                                  |  | X |   | X | X |  |   | X |  | X |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |  |   |   |   |   |  |   |   |  |   |   |
| Are they used:                                                                                                                             |  |   |   |   |   |  |   |   |  |   |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |  |   | X |   |   |  |   |   |  |   |   |
| Continuously as ideas are developed?                                                                                                       |  |   | X |   |   |  |   |   |  |   |   |
| Do students work with pictures, drawings, and other representations?                                                                       |  | X |   | X |   |  | X |   |  | X | X |
| <b>E. Situational Lessons</b>                                                                                                              |  |   |   |   |   |  |   |   |  |   |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |  |   | X |   |   |  |   |   |  |   |   |
| Do the lessons provide for:                                                                                                                |  |   |   |   |   |  |   |   |  |   |   |
| Several problems to be identified?                                                                                                         |  |   | X |   |   |  |   |   |  |   |   |
| A variety of approaches to be used?                                                                                                        |  |   | X |   |   |  |   |   |  |   |   |
| Study over several class periods?                                                                                                          |  |   | X |   |   |  |   |   |  |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |  |   |   |   |   |  |   |   |  |   |   |
| Are students:                                                                                                                              |  |   |   |   |   |  |   |   |  |   |   |
| Taught cooperative learning techniques?                                                                                                    |  |   | X |   |   |  |   |   |  |   |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |  |   | X |   |   |  |   |   |  |   |   |

| PUBLISHER                | TITLE                                                       | COPYRIGHT |
|--------------------------|-------------------------------------------------------------|-----------|
| Houghton Mifflin Company | <i>Fundamentals of Mathematics: Skills and Applications</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

Teacher's edition  
 Test masters (one set per building)  
 Practice masters (one set per building)  
 Problem-solving masters (one set per building)  
 Answer key, test masters  
 Answer key, practice masters  
 Answer key, problem-solving masters

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

##### 3. Description of teacher's resource materials

This textbook is not accompanied by a teacher's resource book.

##### 4. Description of related materials available for sale

All of the materials listed under item one on this page are listed for sale in the current catalog.

Houghton Mifflin Company

*Fundamentals of Mathematics: Skills and Applications*

1986

## IV. INFORMATION FROM THE PUBLISHER—Continued

## Part B. Table of Contents

## 1. Addition and Subtraction

## Estimation

## Problem Solving

Unit 1, pages 1—32

|                                                   |    |
|---------------------------------------------------|----|
| Naming Places and Values of Numbers .....         | 2  |
| Rounding .....                                    | 4  |
| Comparing Numbers .....                           | 6  |
| Adding Whole Numbers Without Carrying .....       | 12 |
| Adding with Carrying .....                        | 13 |
| Subtracting Whole Numbers Without Borrowing ..... | 14 |
| Subtracting with Borrowing .....                  | 15 |
| Adding Decimals .....                             | 22 |
| Subtracting Decimals .....                        | 23 |

## 2. Multiplication

## Customary System of Measurement

## Problem Solving

Unit 2, pages 33—64

|                                                         |    |
|---------------------------------------------------------|----|
| Multiplication Without Carrying .....                   | 34 |
| Multiplication with Carrying .....                      | 35 |
| Multiplication by a Multiple of 10, 100, or 1,000 ..... | 36 |
| Multiplication by a Two-Digit Number .....              | 44 |
| Multiplication by a Three- or Four-Digit Number .....   | 45 |
| Multiplication with Zeros .....                         | 46 |
| Multiplying Decimals .....                              | 54 |

## 3. Division

## Metric System

## Problem Solving

Unit 3, pages 65—95

|                                   |    |
|-----------------------------------|----|
| Dividing Without Remainders ..... | 66 |
|-----------------------------------|----|

|                                                |    |
|------------------------------------------------|----|
| Dividing with Remainders .....                 | 67 |
| Dividing by Two- and Three-Digit Numbers ..... | 68 |
| Dividing, Fraction Remainders .....            | 76 |
| Decimal Remainders .....                       | 78 |
| Dividing Decimals .....                        | 86 |

## 4. Basic Fraction Skills

## Geometric Definitions

## Problem Solving

Unit 4, pages 101—132

|                                           |     |
|-------------------------------------------|-----|
| Finding Factors .....                     | 102 |
| Finding the Greatest Common Factor .....  | 103 |
| Writing Fractions in Lowest Terms .....   | 104 |
| Writing Fractions in Higher Terms .....   | 105 |
| Finding Multiples .....                   | 112 |
| Finding the LCM .....                     | 113 |
| Finding the LCD .....                     | 114 |
| Writing Fractions with the LCD .....      | 115 |
| Fractions as Whole or Mixed Numbers ..... | 122 |
| Whole or Mixed Numbers as Fractions ..... | 123 |

## 5. Add and Subtract Fractions

## Pythagorean Theorem, Perimeter

## Problem Solving

Unit 5, pages 133—164

|                                                    |     |
|----------------------------------------------------|-----|
| Adding Fractions, Same Denominator .....           | 134 |
| Adding Mixed Numbers, Same Denominator .....       | 135 |
| Adding Fractions, Different Denominators .....     | 136 |
| Adding Mixed Numbers, Different Denominators ..... | 137 |
| Subtracting Fractions, Same Denominator ..         | 144 |

|                                                         |     |
|---------------------------------------------------------|-----|
| Subtracting Mixed Numbers, Same Denominator .....       | 145 |
| Subtracting Fractions from Whole Numbers .....          | 146 |
| Subtracting Mixed Numbers, Borrowing .....              | 147 |
| Subtracting Fractions, Different Denominators .....     | 154 |
| Subtracting Mixed Numbers, Different Denominators ..... | 155 |

## 6. Multiply and Divide Fractions

## Area and Volume

## Problem Solving

Unit 6, pages 165—195

|                                               |     |
|-----------------------------------------------|-----|
| Multiplying Fractions .....                   | 166 |
| Multiplying Whole Numbers and Fractions ..... | 167 |
| Multiplying Mixed Numbers and Fractions ..... | 168 |
| Multiplying Mixed Numbers .....               | 169 |
| Finding Reciprocals .....                     | 176 |
| Dividing Fractions .....                      | 177 |
| Dividing Whole Numbers and Fractions .....    | 178 |
| Dividing Mixed Numbers and Fractions .....    | 179 |
| Dividing Mixed and Whole Numbers .....        | 186 |
| Dividing Mixed Numbers .....                  | 187 |

## 7. Rates, Ratios, Proportions

## Probability and Statistics

## Problem Solving

Unit 7, pages 201—232

|                                |     |
|--------------------------------|-----|
| Writing Ratios .....           | 202 |
| Determining Equal Ratios ..... | 203 |
| Solving Proportions .....      | 204 |

| PUBLISHER                | TITLE                                                       | COPYRIGHT |
|--------------------------|-------------------------------------------------------------|-----------|
| Houghton Mifflin Company | <i>Fundamentals of Mathematics: Skills and Applications</i> | 1986      |

## Part B. Table of Contents—Continued

|                                               |     |                        |  |
|-----------------------------------------------|-----|------------------------|--|
| <b>7. Rates, Ratios, Proportions</b>          |     |                        |  |
| Probability and Statistics                    |     |                        |  |
| Problem Solving—Continued                     |     |                        |  |
| Writing Rates as Fractions .....              | 212 |                        |  |
| Equal Rates in Proportions .....              | 214 |                        |  |
| Using Unit Rates .....                        | 222 |                        |  |
| <b>8. Fractions, Decimals, Percents</b>       |     |                        |  |
| Bar, Line, and Circle Graphs                  |     |                        |  |
| Problem Solving                               |     | Unit 8, pages 233—264  |  |
| Writing Fractions as Decimals .....           | 234 |                        |  |
| Decimals as Fractions .....                   | 235 |                        |  |
| Mixed Numbers as Decimals .....               | 236 |                        |  |
| Decimals as Mixed Numbers .....               | 237 |                        |  |
| Writing Fractions with Denominators           |     |                        |  |
| of 100 .....                                  | 244 |                        |  |
| Hundredths as Percents .....                  | 245 |                        |  |
| Decimals as Percents .....                    | 246 |                        |  |
| Fractions as Percents .....                   | 247 |                        |  |
| Writing Percents as Decimals .....            | 254 |                        |  |
| Percents as Fractions .....                   | 255 |                        |  |
| <b>9. Percent Skills</b>                      |     |                        |  |
| Applying Percents                             |     |                        |  |
| Problem Solving                               |     | Unit 9, pages 265—295  |  |
| Writing Number Sentences .....                | 266 |                        |  |
| Identifying Percent, Base, and Percentage ... | 267 |                        |  |
| Finding the Percentage .....                  | 268 |                        |  |
| Finding the Base .....                        | 276 |                        |  |
| Finding the Percent .....                     | 278 |                        |  |
| Using Proportions .....                       | 286 |                        |  |
| <b>10. Positive and Negative Numbers</b>      |     |                        |  |
| Using Negative Numbers                        |     |                        |  |
| Problem Solving                               |     | Unit 10, pages 301—332 |  |
| Positive and Negative Numbers .....           | 302 |                        |  |
| On a Number Line .....                        | 303 |                        |  |
| Adding Numbers, Same Sign .....               | 304 |                        |  |
| Adding Numbers, Different Signs .....         | 305 |                        |  |
| Subtracting a Positive Number .....           | 312 |                        |  |
| Subtracting a Negative Number .....           | 313 |                        |  |
| Multiplying and Dividing, Same Sign .....     | 314 |                        |  |
| Multiplying and Dividing, Different Signs ... | 315 |                        |  |
| Order of Operations .....                     | 322 |                        |  |
| Grouping Symbols .....                        | 323 |                        |  |
| <b>11. Variable Expressions</b>               |     |                        |  |
| Translating Words into Symbols                |     |                        |  |
| Problem Solving                               |     | Unit 11, pages 333—364 |  |
| Variable Expressions .....                    | 334 |                        |  |
| Multiplication Symbols .....                  | 335 |                        |  |
| Evaluating Variable Expressions .....         | 336 |                        |  |
| Properties of Zero and One .....              | 344 |                        |  |
| Combining Like Terms .....                    | 345 |                        |  |
| Exponents .....                               | 346 |                        |  |
| Exponents and Evaluation .....                | 347 |                        |  |
| Solving an Equation .....                     | 354 |                        |  |
| Solving an Inequality .....                   | 355 |                        |  |
| <b>12. Equations</b>                          |     |                        |  |
| Coordinates and Graphs                        |     |                        |  |
| Problem Solving                               |     | Unit 12, pages 365—395 |  |
| Solving Equations by Addition .....           | 366 |                        |  |
| Solving Equations by Subtraction .....        | 368 |                        |  |
| Solving Equations by Division .....           | 376 |                        |  |
| Solving Equations by Multiplication .....     | 377 |                        |  |
| Solving Equations .....                       | 378 |                        |  |
| Using Two Operations .....                    | 379 |                        |  |
| Equations with Two Variables .....            | 386 |                        |  |
| Solving for One Variable .....                | 387 |                        |  |

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**A** *APPLYING MATHEMATICS IN DAILY LIVING* is a one-year general mathematics textbook designed for the student who has basic competency in mathematics skills but can benefit from skills reinforcement through practical applications.

Problem-solving activities, integrated into every chapter, develop students' higher level thinking skills.

A "Computing Skills Refresher" section provides reteaching and maintenance of computational skills as needed.

"Calculator Skills" sections provide instruction and practice in the use of the hand-held calculator. These sections can be used with textbook lessons or as a separate unit.

The text may be used in a terminal high school course or as a bridge to higher level mathematics courses.

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                |                                                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum |                                                                                                              |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | ****                                           | Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | ***                                            | Means mainly high school core content but some from other levels                                             |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | **                                             | Means mainly from other levels but some from high school core content                                        |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | *                                              | Means little or no match with high school core content                                                       |
|                                                                                       | <b>Blank</b>                                   | Means there is no material that matches the high school core curriculum                                      |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | N                  |                                        |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | L                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | M                  | *                                      |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | L                  | *                                      |
| Determining theoretical and empirical probability         | M                  | *                                      |
| Determining measures of central tendency                  | M                  | **                                     |
| Interpreting data and making inferences                   | H                  | **                                     |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | L                  | **                                     |



|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | ** |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | M | *  |
| Constructing standard straightedge compass figures                          | N |    |
| Making models, scale drawings, orthographic projections                     | M | ** |
| Establishing congruence, similarity, symmetry                               | L | *  |
| Using coordinate geometry                                                   | M | *  |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | N |    |
| Graphing functions and investigating their properties                       | L | *  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | L | *  |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | *  |
| Evaluating algebraic expressions                                            | M | *  |
| Solving equations and inequalities                                          | M | *  |
| Solving problems involving direct and inverse variation, including percents | H | ** |

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 |                   | X                           |                                                     |                  |                   | X               |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   | X                           | X                                                   | X                |                   |                 |                      |
|                 | X        |                | X                 |                   | X                           | X                                                   | X                |                   |                 | X                    |
|                 | X        |                | X                 |                   | X                           | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 |                   |                             | X                                                   | X                |                   |                 | X                    |
|                 | X        |                | X                 |                   | X                           | X                                                   | X                |                   |                 | X                    |

|                                                                                                                                            |   |   |   |   |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |   |   |   |   |   |   |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |   |   |   |   |   |   |
| To illustrate and/or develop concepts?                                                                                                     |   |   | X |   |   |   |   |   |   |   |   |
| In lessons designed to teach how to use calculators?                                                                                       | X |   |   | X |   |   | X | X | X |   |   |
| In "calculator" problems?                                                                                                                  |   | X |   | X | X | X | X | X |   |   |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |   |   |   |   |   |   |   |   |
| Are they used:                                                                                                                             |   |   |   |   |   |   |   |   |   |   |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               | X |   |   | X | X | X | X | X |   | X |   |
| Continuously as ideas are developed?                                                                                                       | X |   |   | X | X | X | X | X |   |   |   |
| Do students work with pictures, drawings, and other representations?                                                                       | X |   |   | X |   | X | X | X | X | X | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |   |   |   |   |   |   |   |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |   | X | X | X | X |   | X |   | X |   |
| Do the lessons provide for:                                                                                                                |   |   |   |   |   |   |   |   |   |   |   |
| Several problems to be identified?                                                                                                         |   |   | X | X | X | X | X | X |   | X |   |
| A variety of approaches to be used?                                                                                                        |   |   | X | X | X | X |   | X |   |   |   |
| Study over several class periods?                                                                                                          |   |   | X | X | X | X |   | X |   |   |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |   |   |   |   |   |   |   |   |
| Are students:                                                                                                                              |   |   |   |   |   |   |   |   |   |   |   |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |   |   |   |   |   |   |   |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |   | X |   |   |   |   |   |   |   |   |

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

One teacher's edition is supplied with the purchase of 25 copies of the students' textbooks.

One teacher's resource binder is supplied to each teacher with the purchase of 25 copies of the students' textbooks.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes (in manual prior to annotated students' pages)
- ☒ Answers/placement (annotated on appropriate student's page adjacent to problem)

##### 3. Description of teacher's resource materials

The teacher's resource binder of reproducible masters includes:

- Chapter tests: forms A and B for each chapter
- Cumulative tests organized to cover two chapters
- Computing skills tests
- Applications (projects and discovery lessons)
- Answers for the masters
- Answers for the odd-numbered exercises for the student's textbook

##### 4. Description of related materials available for sale

"Answers to Selected Exercises" includes answers for all the odd-numbered exercises in the textbook.

Computer Supplement: "Applying Mathematics Skills" consists of three disks. Disks 1 and 3 are tutorials that focus on work-related topics. Disk 2 is a game simulation on personal financial planning.

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### 1. Using Data and Making Estimates

|                              |    |
|------------------------------|----|
| Using Tables .....           | 10 |
| The Mode .....               | 15 |
| The Median .....             | 17 |
| The Mean .....               | 20 |
| The Range .....              | 24 |
| Frequency Tables .....       | 26 |
| Using Frequency Tables ..... | 29 |
| More About Averages .....    | 31 |
| Estimating Sums .....        | 35 |
| Estimating Differences ..... | 38 |
| Estimating Products .....    | 41 |
| Estimating Quotients .....   | 44 |

##### 2. Using Graphs

|                                         |    |
|-----------------------------------------|----|
| Reading Maps .....                      | 52 |
| Points on the Plane .....               | 57 |
| Graphing Points from Tables .....       | 60 |
| Reading Bar Graphs .....                | 64 |
| Reading Line Graphs .....               | 67 |
| Making Bar Graphs and Line Graphs ..... | 70 |
| Pictographs .....                       | 76 |
| Circle Graphs .....                     | 78 |
| Reading Schematics .....                | 82 |

##### 3. Equations and Formulas

|                            |     |
|----------------------------|-----|
| Open Sentences .....       | 94  |
| Parentheses .....          | 96  |
| Orders of Operations ..... | 98  |
| Using Formulas .....       | 101 |

|                                                 |     |
|-------------------------------------------------|-----|
| Equations with Addition or Subtraction .....    | 104 |
| Equations with Multiplication or Division ..... | 108 |
| Two-Step Equations .....                        | 112 |
| Equations with Fractional Solutions .....       | 117 |
| Equations Containing Fractions .....            | 120 |
| Solving Problems with Formulas .....            | 124 |

##### 4. Ratio, Proportion, and Percent

|                                         |     |
|-----------------------------------------|-----|
| Ratios .....                            | 136 |
| Equivalent Ratios .....                 | 139 |
| Proportions .....                       | 143 |
| Solving Problems with Proportions ..... | 146 |
| Similarity .....                        | 150 |
| Scale Drawing .....                     | 154 |
| Percent as a Ratio .....                | 160 |
| Solving Problems with Percent .....     | 163 |
| Percent in Decimal Form .....           | 168 |
| Estimating with Percents .....          | 172 |

##### 5. Measurement

|                                |     |
|--------------------------------|-----|
| Units of Measure .....         | 184 |
| Measurement .....              | 188 |
| Measuring Length .....         | 191 |
| Equivalent Lengths .....       | 195 |
| The Metric System .....        | 198 |
| Equivalent Metric Length ..... | 202 |
| Weight .....                   | 204 |
| Capacity .....                 | 208 |
| Time .....                     | 211 |
| Temperature .....              | 216 |
| Measuring Angles .....         | 218 |

##### 6. Perimeter, Area, and Volume

|                          |     |
|--------------------------|-----|
| Polygons .....           | 226 |
| Perimeter .....          | 229 |
| Area .....               | 233 |
| Equivalent Areas .....   | 237 |
| Parallelograms .....     | 242 |
| Triangles .....          | 245 |
| Circumference .....      | 249 |
| Area of a Circle .....   | 252 |
| Volume .....             | 255 |
| Equivalent Volumes ..... | 260 |
| Cylinders .....          | 265 |

##### 7. Earning Money

|                          |     |
|--------------------------|-----|
| Applying for a Job ..... | 278 |
| Math on the Job .....    | 280 |
| Overtime .....           | 284 |
| Piecework .....          | 286 |
| Commission .....         | 288 |
| Tips .....               | 290 |
| Net Pay .....            | 294 |
| Income Tax .....         | 300 |

##### 8. Managing Money

|                                  |     |
|----------------------------------|-----|
| Managing Personal Finances ..... | 312 |
| How Do You Spend It? .....       | 316 |
| Budgets .....                    | 320 |
| Checking Accounts .....          | 324 |
| Bank Statements .....            | 328 |
| Simple Interest .....            | 332 |

| PUBLISHER                      | TITLE                                       | COPYRIGHT |
|--------------------------------|---------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Applying Mathematics in Daily Living</i> | 1986      |

## Part B. Table of Contents—Continued

### 8. Managing Money—Continued

|                               |     |
|-------------------------------|-----|
| Compound Interest .....       | 335 |
| Compound Interest Table ..... | 337 |
| Cost of Credit .....          | 339 |
| Annual Percentage Rate .....  | 343 |
| Credit Cards .....            | 349 |

### 9. Using Money

|                                             |     |
|---------------------------------------------|-----|
| How Teenagers Spend Money .....             | 362 |
| Renting an Apartment .....                  | 364 |
| Comparison Shopping .....                   | 367 |
| Eating Economically .....                   | 372 |
| Buying Clothes Wisely .....                 | 376 |
| Spending Money for Leisure Activities ..... | 380 |
| Buying a New Car .....                      | 386 |
| Financing a Car .....                       | 390 |
| Car Insurance .....                         | 396 |
| Health Insurance .....                      | 400 |

### 10. Probability and Computer Literacy

|                             |     |
|-----------------------------|-----|
| Probability .....           | 408 |
| 0 and 1 Probabilities ..... | 411 |

|                                         |     |
|-----------------------------------------|-----|
| Sample Spaces .....                     | 413 |
| Probability and Percent .....           | 416 |
| Predicting .....                        | 420 |
| What Is a Computer? .....               | 422 |
| How Are Computers Used? .....           | 425 |
| How to Tell a Computer What to Do ..... | 428 |
| What Is BASIC? .....                    | 432 |
| What Is a Computer Program? .....       | 435 |

### Computing Skills Refresher (48 lessons)

#### Part 1: Whole Numbers and Decimals

|                                                         |     |
|---------------------------------------------------------|-----|
| Reading and Writing Whole Numbers<br>and Decimals ..... | 448 |
| Comparing Whole Numbers and Decimals .....              | 450 |
| Rounding Numbers .....                                  | 451 |
| Adding Whole Numbers and Decimals .....                 | 452 |
| Subtracting Whole Numbers and<br>Decimals .....         | 456 |
| Multiplication: Whole Numbers and<br>Decimals .....     | 462 |
| Division: Whole Numbers and Decimals .....              | 470 |
| Exponents .....                                         | 483 |

### Part 2: Fractions and Mixed Numbers

|                                              |     |
|----------------------------------------------|-----|
| Fractions and Mixed Numbers .....            | 484 |
| Equivalent Fractions .....                   | 489 |
| Greatest Common Factor .....                 | 492 |
| Multiplying and Dividing Fractions .....     | 494 |
| Adding and Subtracting Fractions .....       | 502 |
| Adding and Subtracting Mixed Numbers .....   | 510 |
| Multiplying and Dividing Mixed Numbers ..... | 514 |
| Fractions to Decimals .....                  | 518 |
| Mixed Numbers to Decimals .....              | 520 |
| Decimals to Fractions or Mixed Numbers ..... | 521 |

### Calculator Skills ..... 523—535

### Additional Chapter Contents

|                    |
|--------------------|
| Preview Test       |
| Skills Refresher   |
| Consumer Topic     |
| Careers            |
| Chapter Review     |
| Chapter Test       |
| Cumulative Reviews |



| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

# I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**M**ATHEMATICS SKILLS FOR DAILY LIVING is a one-year general mathematics textbook designed to develop essential mathematics skills and problem-solving techniques.

The goal is to provide the opportunity for students to become mathematically literate in the basic skills applicable to everyday life. With examples from real-life situations, this textbook establishes the relevance of learning mathematics skills.

It is designed for the student who lacks a solid foundation of basic skills and is unlikely to pursue higher level mathematics courses. This textbook should be considered for the first course of a general mathematics sequence or for a terminal course.

| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | M                  | **                                     |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | M                  | *                                      |
| Converting within a measurement system                        | H                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | H                  | *                                      |
| Determining measures of central tendency                  | H                  | **                                     |
| Interpreting data and making inferences                   | H                  | **                                     |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | *  |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | M | *  |
| Constructing standard straightedge compass figures                          | L | *  |
| Making models, scale drawings, orthographic projections                     | M | *  |
| Establishing congruence, similarity, symmetry                               | M | ** |
| Using coordinate geometry                                                   | M | *  |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | N |    |
| Graphing functions and investigating their properties                       | L | *  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | L | *  |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | L | *  |
| Evaluating algebraic expressions                                            | L | *  |
| Solving equations and inequalities                                          | M | *  |
| Solving problems involving direct and inverse variation, including percents | H | ** |

| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 | X        |                | X                 |                   |                             |                                                     |                  |                   | X               |                      |
|                 |          | X              | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              | X                 | X                 |                             | X                                                   | X                |                   |                 | X                    |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 |                   |                             | X                                                   | X                |                   |                 | X                    |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |   |  |   |   |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|--|---|---|---|---|---|---|---|---|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |  |   |   |   |   |   |   |   |   |   |
| Are they used:                                                                                                                             |   |  |   |   |   |   |   |   |   |   |   |
| To illustrate and/or develop concepts?                                                                                                     |   |  | X | X |   |   |   |   |   | X |   |
| In lessons designed to teach how to use calculators?                                                                                       | X |  |   | X |   |   |   |   |   | X |   |
| In "calculator" problems?                                                                                                                  | X |  |   | X |   | X |   |   |   | X |   |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |  |   |   |   |   |   |   |   |   |   |
| Are they used:                                                                                                                             |   |  |   |   |   |   |   |   |   |   |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |  | X |   |   |   | X |   |   |   |   |
| Continuously as ideas are developed?                                                                                                       |   |  | X | X |   | X | X | X |   |   | X |
| Do students work with pictures, drawings, and other representations?                                                                       | X |  |   | X |   |   | X | X | X | X | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |  |   |   |   |   |   |   |   |   |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |  | X | X | X | X |   |   |   | X |   |
| Do the lessons provide for:                                                                                                                |   |  |   |   |   |   |   |   |   |   |   |
| Several problems to be identified?                                                                                                         |   |  | X |   |   |   |   |   |   |   |   |
| A variety of approaches to be used?                                                                                                        |   |  | X |   |   |   |   |   |   |   |   |
| Study over several class periods?                                                                                                          |   |  | X | X |   | X |   |   |   | X |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |  |   |   |   |   |   |   |   |   |   |
| Are students:                                                                                                                              |   |  |   |   |   |   |   |   |   |   |   |
| Taught cooperative learning techniques?                                                                                                    |   |  | X |   |   |   |   |   |   |   |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |  | X |   |   |   |   |   |   |   |   |

| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

One teacher's edition is supplied with the purchase of 25 copies of students' textbooks.

One teacher's resource binder is supplied for each teacher with the purchase of 25 copies of students' textbooks.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☒ Teaching notes (in manual following the annotated students' pages)
- ☒ Answers/placement (annotated on appropriate student's page adjacent to problem)

##### 3. Description of teacher's resource materials

The teacher's resource binder of reproducible masters includes:

- Chapter tests: forms A and B for each chapter
- Cumulative tests
- Competency tests
- Skills masters
- Projects
- Answers

##### 4. Description of related materials available for sale

"Answers to Selected Exercises" includes answers for all the odd-numbered exercises in the textbook.



| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                                             |     |  |  |
|-------------------------------------------------------------|-----|--|--|
| <b>1. Adding and Subtracting Whole Numbers and Decimals</b> |     |  |  |
| Reading/Writing Whole Numbers .....                         | 10  |  |  |
| Adding Whole Numbers/Decimals .....                         | 12  |  |  |
| Addition Problems .....                                     | 18  |  |  |
| Subtracting Whole Numbers and Decimals .....                | 20  |  |  |
| Subtraction Problems .....                                  | 24  |  |  |
| Rounding and Estimating .....                               | 26  |  |  |
| Problem Solving .....                                       | 30  |  |  |
| <b>2. Multiplying Whole Numbers and Decimals</b>            |     |  |  |
| Multiplying Two-Digits by One-Digit .....                   | 38  |  |  |
| Multiplying Whole Numbers .....                             | 40  |  |  |
| Multiplication Problems .....                               | 42  |  |  |
| Problem Solving .....                                       | 46  |  |  |
| Decimal Points in Products .....                            | 48  |  |  |
| Multiplying Decimals .....                                  | 50  |  |  |
| Problem Solving .....                                       | 56  |  |  |
| <b>3. Dividing Whole Numbers and Decimals</b>               |     |  |  |
| Dividing by One-Digit .....                                 | 66  |  |  |
| Dividing by Two-Digits .....                                | 68  |  |  |
| Division Problems .....                                     | 70  |  |  |
| Dividing a Decimal by a Whole Number .....                  | 72  |  |  |
| Problem Solving .....                                       | 74  |  |  |
| Dividing by a Three-Digit Number .....                      | 76  |  |  |
| Dividing by 10, 100, 1,000 .....                            | 78  |  |  |
| Problem Solving .....                                       | 80  |  |  |
| Dividing by a Decimal .....                                 | 82  |  |  |
| Rounding Quotients .....                                    | 86  |  |  |
| Problem Solving .....                                       | 88  |  |  |
| <b>4. Adding Fractions</b>                                  |     |  |  |
| Fractions .....                                             | 98  |  |  |
| Fractions and Decimals .....                                | 104 |  |  |
| Problem Solving .....                                       | 106 |  |  |
| Adding Fractions .....                                      | 108 |  |  |
| Problem Solving .....                                       | 114 |  |  |
| Mixed Numbers .....                                         | 116 |  |  |
| Adding Fractions/Mixed Numbers .....                        | 118 |  |  |
| Problem Solving .....                                       | 122 |  |  |
| <b>5. Subtracting Fractions</b>                             |     |  |  |
| Comparing Fractions and Mixed Numbers ..                    | 130 |  |  |
| Problem Solving .....                                       | 134 |  |  |
| Subtracting Fractions .....                                 | 136 |  |  |
| Problem Solving .....                                       | 140 |  |  |
| Subtracting Mixed Numbers .....                             | 142 |  |  |
| Adding and Subtracting .....                                | 144 |  |  |
| Problem Solving .....                                       | 146 |  |  |
| Review of Nonmetric Units .....                             | 148 |  |  |
| Problems .....                                              | 150 |  |  |
| <b>6. Multiplying and Dividing Fractions</b>                |     |  |  |
| Multiplication of Fractions .....                           | 158 |  |  |
| Products to Lowest Terms .....                              | 162 |  |  |
| Problem Solving .....                                       | 164 |  |  |
| Division of Fractions .....                                 | 166 |  |  |
| Problem Solving .....                                       | 172 |  |  |
| Multiply/Divide Mixed Numbers .....                         | 174 |  |  |
| Problem Solving .....                                       | 178 |  |  |
| Equivalent Measurements .....                               | 180 |  |  |
| <b>7. Geometry</b>                                          |     |  |  |
| Points, Lines, and Planes .....                             | 188 |  |  |
| Angles .....                                                | 190 |  |  |
| Parallel and Perpendicular Lines .....                      | 194 |  |  |
| Polygons .....                                              | 196 |  |  |
| Problem Solving .....                                       | 202 |  |  |
| Circles .....                                               | 204 |  |  |
| Congruent Figures and Symmetry .....                        | 206 |  |  |
| Problem Solving .....                                       | 210 |  |  |
| <b>8. Ratios and Proportions</b>                            |     |  |  |
| Ratios .....                                                | 224 |  |  |
| Proportions .....                                           | 228 |  |  |
| Problem Solving .....                                       | 232 |  |  |
| Solving Proportions .....                                   | 234 |  |  |
| Problem Solving .....                                       | 238 |  |  |
| Similar Figures .....                                       | 242 |  |  |
| Scale Drawings .....                                        | 244 |  |  |
| Problem Solving .....                                       | 246 |  |  |
| <b>9. Percents</b>                                          |     |  |  |
| The Meaning of Percent .....                                | 254 |  |  |
| Finding a Percent of a Number .....                         | 258 |  |  |
| Problem Solving .....                                       | 260 |  |  |
| What Percent Is One Number of Another? ..                   | 262 |  |  |
| Problem Solving .....                                       | 264 |  |  |

| PUBLISHER                      | TITLE                                      | COPYRIGHT |
|--------------------------------|--------------------------------------------|-----------|
| Laidlaw Educational Publishers | <i>Mathematics Skills for Daily Living</i> | 1986      |

## Part B. Table of Contents—Continued

|                                                             |     |                                                            |     |                                                         |     |
|-------------------------------------------------------------|-----|------------------------------------------------------------|-----|---------------------------------------------------------|-----|
| Finding the Whole, Given the Part and the Percent . . . . . | 266 | Making Bar, Line, and Circle Graphs . . . . .              | 354 | 16. Supplementary Topics, Part 2                        |     |
| Problem Solving . . . . .                                   | 268 | Problems . . . . .                                         | 360 | Order of Operations . . . . .                           | 446 |
| Sales Tax/Discounts/Commissions . . . . .                   | 270 | 13. Statistics                                             |     | Evaluating Expressions . . . . .                        | 448 |
| Sports Statistics . . . . .                                 | 275 | Stem-and-Leaf Displays . . . . .                           | 368 | Solving Addition and Subtraction Equations . . . . .    | 450 |
| 10. Metric Measurements                                     |     | Frequency Tables . . . . .                                 | 370 | Solving Multiplication and Division Equations . . . . . | 452 |
| Metric Length . . . . .                                     | 282 | Range, Mean, Median, and Mode . . . . .                    | 372 | Problem Solving . . . . .                               | 454 |
| Problem Solving . . . . .                                   | 288 | Uses of Statistics . . . . .                               | 382 | Opposites . . . . .                                     | 456 |
| Metric Weight (Mass)/Capacity . . . . .                     | 290 | Problem Solving . . . . .                                  | 384 | Extending the Number Line . . . . .                     | 458 |
| Problem Solving . . . . .                                   | 294 | Misuse of Statistics . . . . .                             | 388 | Addition on a Number Line . . . . .                     | 460 |
| Temperature . . . . .                                       | 296 | Problems . . . . .                                         | 390 | Adding Positive and Negative Numbers . . . . .          | 462 |
| Problems . . . . .                                          | 298 | 14. Probability                                            |     | Problem Solving . . . . .                               | 464 |
| 11. Perimeter, Area, and Volume                             |     | Probabilities/Limits of Probability . . . . .              | 398 | Ordered Pairs/Coordinate Graphs . . . . .               | 466 |
| Perimeter . . . . .                                         | 308 | Adding Probabilities . . . . .                             | 402 | Additional Chapter Contents                             |     |
| Circumference . . . . .                                     | 312 | Complementary Probabilities . . . . .                      | 404 | Preview Test                                            |     |
| Area . . . . .                                              | 314 | Multiplying Probabilities . . . . .                        | 406 | Checkpoint                                              |     |
| Solid Shapes . . . . .                                      | 322 | Probabilities of Repeated Events . . . . .                 | 408 | Math Notes                                              |     |
| Volume . . . . .                                            | 324 | Determining Probabilities from Data . . . . .              | 410 | Skills Review                                           |     |
| Surface Area . . . . .                                      | 330 | Problems . . . . .                                         | 412 | Calculator Notes                                        |     |
| Problem Solving . . . . .                                   | 332 | 15. Supplementary Topics, Part 1                           |     | Consumer Topic                                          |     |
| 12. Graphs                                                  |     | Factors . . . . .                                          | 424 | Careers                                                 |     |
| Bar, Line, and Picture Graphs . . . . .                     | 342 | Greatest Common Factor . . . . .                           | 428 | Chapter Review                                          |     |
| Circle Graphs and 100 Percent Bar Graphs . . . . .          | 350 | Least Common Multiple . . . . .                            | 430 | Chapter Test                                            |     |
| Schematics . . . . .                                        | 352 | Problem Solving . . . . .                                  | 432 | Cumulative Reviews                                      |     |
|                                                             |     | Computer Literacy . . . . .                                | 434 | Extra Practice . . . . .                                | 473 |
|                                                             |     | Problems with Too Much or Too Little Information . . . . . | 440 | Glossary . . . . .                                      | 519 |

| PUBLISHER             | TITLE                           | COPYRIGHT |
|-----------------------|---------------------------------|-----------|
| Media Materials, Inc. | <i>Basic Mathematics Skills</i> | 1982      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**B**ASIC MATHEMATICS SKILLS is for remedial or special education high school students in grades seven through twelve. This text is designed for students who have been exposed to the concepts of modern mathematics but who need some additional instruction and reinforcement in the basic skills. The no frills approach emphasizes mastering necessary skills through a wealth of drill exercises.

This textbook presents a logical, sequential development of the arithmetic of whole numbers, fractions, decimals, and percent, while providing numerous problems of a practical nature. Some of the special features of *Basic Mathematics Skills* are easy readability, provision of examples, functional problems, and varied formats.

| PUBLISHER             | TITLE                           | COPYRIGHT |
|-----------------------|---------------------------------|-----------|
| Media Materials, Inc. | <i>Basic Mathematics Skills</i> | 1982      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | N                  |                                        |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | L                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | N                  |                                        |
| Interpreting data and making inferences                   | M                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Measurement—Continued</b>                                                |   |   |
| Using formulas to determine measures                                        | M | * |
| <b>C. Geometry</b>                                                          |   |   |
| Using geometric properties of plane and solid figures to determine measures | M | * |
| Constructing standard straightedge compass figures                          | N |   |
| Making models, scale drawings, orthographic projections                     | L | * |
| Establishing congruence, similarity, symmetry                               | N | * |
| Using coordinate geometry                                                   | N |   |
| <b>D. Patterns and Functions</b>                                            |   |   |
| Determining and extending patterns                                          | N | * |
| Graphing functions and investigating their properties                       | N |   |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Logic—Continued</b>                                                      |   |   |
| Using deductive reasoning to reach conclusions                              | N |   |
| Distinguishing between necessary and sufficient conditions                  | N |   |
| <b>G. Algebra</b>                                                           |   |   |
| Creating mathematical models to represent situations                        | N |   |
| Evaluating algebraic expressions                                            | L | * |
| Solving equations and inequalities                                          | L | * |
| Solving problems involving direct and inverse variation, including percents | L | * |



Media Materials, Inc.

Basic Mathematics Skills

1982

## III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                             |
| Substantially means integrated throughout the book.<br>Somewhat means taught at least occasionally.<br>Little or none means little or none. |

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 |                      |

## A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

## B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?



|                                                                                                                                            |   |   |   |   |  |  |   |  |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|--|--|---|--|--|--|--|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |   |   |   |   |  |  |   |  |  |  |  |
| To illustrate and/or develop concepts?                                                                                                     |   |   | X | X |  |  |   |  |  |  |  |
| In lessons designed to teach how to use calculators?                                                                                       |   |   | X | X |  |  |   |  |  |  |  |
| In "calculator" problems?                                                                                                                  |   |   | X | X |  |  |   |  |  |  |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |   |  |  |   |  |  |  |  |
| Are they used:                                                                                                                             |   |   |   |   |  |  |   |  |  |  |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   | X |   | X |  |  | X |  |  |  |  |
| Continuously as ideas are developed?                                                                                                       |   | X |   | X |  |  |   |  |  |  |  |
| Do students work with pictures, drawings, and other representations?                                                                       | X |   |   | X |  |  | X |  |  |  |  |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |   |  |  |   |  |  |  |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |   | X |   |  |  |   |  |  |  |  |
| Do the lessons provide for:                                                                                                                |   |   |   |   |  |  |   |  |  |  |  |
| Several problems to be identified?                                                                                                         |   | X |   | X |  |  | X |  |  |  |  |
| A variety of approaches to be used?                                                                                                        |   |   | X |   |  |  |   |  |  |  |  |
| Study over several class periods?                                                                                                          |   |   | X |   |  |  |   |  |  |  |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |   |  |  |   |  |  |  |  |
| Are students:                                                                                                                              |   |   |   |   |  |  |   |  |  |  |  |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |   |  |  |   |  |  |  |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |   | X |   |  |  |   |  |  |  |  |

| PUBLISHER             | TITLE                           | COPYRIGHT |
|-----------------------|---------------------------------|-----------|
| Media Materials, Inc. | <i>Basic Mathematics Skills</i> | 1982      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

On request one free teacher's guide is provided with every purchase of ten textbooks. This teacher's guide is meant to be a resource for the teacher in checking the students' work and in planning for further instruction. The teacher's guide includes reproducible masters for practice and tests. Also on request, the answer key for the student's workbook is provided free when ten students' workbooks are purchased.

##### 2. Description of the teacher's edition

- ☐ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

A teacher's guide, an answer key, and reproducible supplementary exercises are provided (see the description above).

##### 3. Description of teacher's resource materials

Blackline masters

##### 4. Description of related materials available for sale

Student's workbook  
Workbook answer key  
Correlated software package

| PUBLISHER             | TITLE                           | COPYRIGHT |
|-----------------------|---------------------------------|-----------|
| Media Materials, Inc. | <i>Basic Mathematics Skills</i> | 1982      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### 1. Whole Numbers

|                                         |    |
|-----------------------------------------|----|
| Place Value .....                       | 1  |
| Reading and Writing Whole Numbers ..... | 2  |
| Rounding Whole Numbers .....            | 3  |
| Adding Whole Numbers .....              | 6  |
| Subtracting Whole Numbers .....         | 10 |
| Multiplying Whole Numbers .....         | 14 |
| Dividing Whole Numbers .....            | 22 |
| Finding the Average .....               | 30 |
| Exponents .....                         | 32 |
| Order of Operations .....               | 33 |
| Test .....                              | 34 |

##### 2. Numbers Theory

|                                   |    |
|-----------------------------------|----|
| Factors .....                     | 35 |
| Multiples .....                   | 36 |
| Prime and Composite Numbers ..... | 37 |
| Sets of Numbers .....             | 38 |
| Finding Prime Numbers .....       | 39 |
| Divisibility Tests .....          | 41 |
| Prime Factorization .....         | 45 |
| Least Common Multiple .....       | 46 |
| Greatest Common Factors .....     | 48 |
| Tests .....                       | 51 |

##### 3. Fractions

|                                          |    |
|------------------------------------------|----|
| Understanding Fractions .....            | 52 |
| Comparing Fractions .....                | 53 |
| Changing Fractions to Higher Terms ..... | 54 |
| Renaming Fractions in Lowest Terms ..... | 56 |

##### Renaming Mixed Numbers as Improper

|                                             |    |
|---------------------------------------------|----|
| Fractions .....                             | 57 |
| Renaming Improper Fractions .....           | 58 |
| Writing Mixed Numbers in Lowest Terms ..... | 59 |
| Multiplying Fractions .....                 | 61 |
| Multiplying Mixed Numbers .....             | 63 |
| Dividing Fractions .....                    | 65 |
| Dividing Mixed Numbers .....                | 67 |
| Adding with Like Denominators .....         | 69 |
| Adding Unlike Denominators .....            | 71 |
| Subtracting with Like Denominators .....    | 73 |
| Subtracting with Unlike Denominators .....  | 75 |
| Subtracting with Renaming .....             | 77 |
| Test .....                                  | 80 |

##### 4. Decimals

|                                      |     |
|--------------------------------------|-----|
| Place Value .....                    | 81  |
| Writing Decimals from Diagrams ..... | 83  |
| Reading Decimals .....               | 85  |
| Writing Decimals from Words .....    | 87  |
| Comparing Decimals .....             | 88  |
| Rounding Decimals .....              | 91  |
| Adding Decimals .....                | 93  |
| Subtracting Decimals .....           | 96  |
| Multiplying Decimals .....           | 98  |
| Scientific Notation .....            | 102 |
| Dividing Decimals .....              | 105 |
| Renaming Decimals as Fractions ..... | 112 |
| Renaming Fractions as Decimals ..... | 113 |
| Decimals That Repeat .....           | 115 |
| Test .....                           | 117 |

##### 5. Metric Measurements

|                                           |     |
|-------------------------------------------|-----|
| Units of Measurement .....                | 118 |
| Length .....                              | 119 |
| Choosing the Appropriate Unit .....       | 121 |
| Changing to Other Units of Length .....   | 122 |
| Working with Measurements of Length ..... | 123 |
| Area .....                                | 124 |
| Volume .....                              | 127 |
| Capacity .....                            | 130 |
| Changing to Other Units of Capacity ..... | 132 |
| Working with Units of Capacity .....      | 133 |
| Mass .....                                | 135 |
| Changing to Other Units of Mass .....     | 137 |
| Working with Units of Mass .....          | 138 |
| Test .....                                | 139 |

##### 6. Ratio and Proportion

|                               |     |
|-------------------------------|-----|
| Writing Ratios .....          | 141 |
| Identifying Proportions ..... | 144 |
| Solving Proportions .....     | 145 |
| Using Proportions .....       | 146 |
| Test .....                    | 150 |

##### 7. Percent

|                                                   |     |
|---------------------------------------------------|-----|
| Meaning of Percent .....                          | 151 |
| Changing Percents to Decimals and Fractions ..... | 152 |
| Renaming Fractions and Decimals as Percents ..... | 154 |
| Major Elements of a Percent Sentence .....        | 158 |

| PUBLISHER             | TITLE                           | COPYRIGHT |
|-----------------------|---------------------------------|-----------|
| Media Materials, Inc. | <i>Basic Mathematics Skills</i> | 1982      |

## Part B. Table of Contents—Continued

### 7. Percent—Continued

|                              |     |
|------------------------------|-----|
| Finding the Percentage ..... | 159 |
| Finding the Base .....       | 162 |
| Finding the Rate .....       | 165 |
| Using Proportions .....      | 168 |
| Discount .....               | 170 |
| Sales Tax .....              | 172 |
| Simple Interest .....        | 174 |
| Installment Buying .....     | 175 |
| Commission .....             | 176 |
| Tips .....                   | 177 |
| Test .....                   | 178 |

### 8. Customary Measurements

|                                           |     |
|-------------------------------------------|-----|
| Computing Units of Time .....             | 179 |
| Liquid Capacity .....                     | 181 |
| Converting Units of Weight .....          | 182 |
| Measuring Length .....                    | 183 |
| Length and Distance .....                 | 185 |
| Operations with Linear Measurements ..... | 186 |
| Perimeter .....                           | 190 |
| Area .....                                | 192 |
| Area of a Triangle .....                  | 194 |

|                                     |     |
|-------------------------------------|-----|
| Area of a Parallelogram .....       | 195 |
| Volume of a Rectangular Prism ..... | 196 |
| Volume of a Triangular Prism .....  | 198 |
| Test .....                          | 199 |

### 9. Scale Drawing

|                      |     |
|----------------------|-----|
| Scale Models .....   | 200 |
| Scale Drawings ..... | 204 |
| Floor Plans .....    | 206 |
| Map Distances .....  | 208 |
| Test .....           | 210 |

### 10. Other Units of Measure

|                              |     |
|------------------------------|-----|
| The Circle .....             | 212 |
| Area of a Circle .....       | 215 |
| Volume of a Cylinder .....   | 216 |
| Area and Volume Review ..... | 217 |
| Angular Measure .....        | 218 |
| Measuring Angles .....       | 219 |
| Elapsed Time .....           | 223 |
| Test .....                   | 226 |

### 11. Graphs

|                           |     |
|---------------------------|-----|
| Reading Pictographs ..... | 227 |
|---------------------------|-----|

|                                            |     |
|--------------------------------------------|-----|
| Constructing Pictographs .....             | 228 |
| Reading Bar Graphs .....                   | 229 |
| Constructing Bar Graphs .....              | 231 |
| Reading Divided Bar Graphs .....           | 232 |
| Reading Multiple Bar Graphs .....          | 233 |
| Making Multiple and Divided Bar Graphs ... | 234 |
| Reading Line Graphs .....                  | 235 |
| Constructing Line Graphs .....             | 236 |
| Reading Circle Graphs .....                | 237 |
| Constructing Circle Graphs .....           | 238 |
| Graphs That Mislead .....                  | 239 |
| Test .....                                 | 243 |

### 12. Supplementary Problems

|                     |     |
|---------------------|-----|
| Whole Numbers ..... | 246 |
| Fractions .....     | 256 |
| Decimals .....      | 266 |
| Percents .....      | 274 |
| Index .....         | 283 |

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**L**IFE SKILLS MATHEMATICS, which is for remedial or special education high school students, applies computational skills to situations encountered in the everyday world of young people. Step-by-step instructions, practice exercises, calculator and computer activities, and chapter tests all combine to ensure students' understanding. The textbook presents a logical, sequential development of the arithmetic of whole numbers, fractions, decimals, and percents within the context of

practical situations that are familiar to most students. Instruction is given in clear, simple terms. The authors believe that students should spend most of their time working mathematics problems, rather than reading about how to work them.

Some of the special features of *Life Skills Mathematics* are easy readability, provision of examples, functional activities, and calculator and computer activities.

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                    |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | **** Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | *** Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | ** Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | * Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                              |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | N                  | *                                      |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | N                  |                                        |
| Evaluating expressions with roots, powers, and absolute value | N                  |                                        |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | L                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | L                  | *                                      |
| Determining theoretical and empirical probability         | H                  | **                                     |
| Determining measures of central tendency                  | N                  | *                                      |
| Interpreting data and making inferences                   | L                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |



|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Measurement—Continued</b>                                                |   |   |
| Using formulas to determine measures                                        | L | * |
| <b>C. Geometry</b>                                                          |   |   |
| Using geometric properties of plane and solid figures to determine measures | M | * |
| Constructing standard straightedge compass figures                          | N | * |
| Making models, scale drawings, orthographic projections                     | N | * |
| Establishing congruence, similarity, symmetry                               | N |   |
| Using coordinate geometry                                                   | N |   |
| <b>D. Patterns and Functions</b>                                            |   |   |
| Determining and extending patterns                                          | N |   |
| Graphing functions and investigating their properties                       | N | * |

|                                                                             |   |   |
|-----------------------------------------------------------------------------|---|---|
| <b>Logic—Continued</b>                                                      |   |   |
| Using deductive reasoning to reach conclusions                              | N |   |
| Distinguishing between necessary and sufficient conditions                  | N |   |
| <b>G. Algebra</b>                                                           |   |   |
| Creating mathematical models to represent situations                        | N |   |
| Evaluating algebraic expressions                                            | N |   |
| Solving equations and inequalities                                          | N |   |
| Solving problems involving direct and inverse variation, including percents | N | * |

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                        |
|------------------------------------------------------------|
| Extent Included                                            |
| <i>Substantially</i> means integrated throughout the book. |
| <i>Somewhat</i> means taught at least occasionally.        |
| <i>Little or none</i> means little or none.                |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             | X                                                   |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             | X                                                   | X                |                   |                 |                      |

|                                                                                                                                            |   |   |   |   |  |  |   |   |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|--|--|---|---|--|--|--|
| <b>C. Use of Calculators</b>                                                                                                               |   |   |   |   |  |  |   |   |  |  |  |
| Are they used:                                                                                                                             |   |   |   |   |  |  |   |   |  |  |  |
| To illustrate and/or develop concepts?                                                                                                     | X |   |   | X |  |  | X | X |  |  |  |
| In lessons designed to teach how to use calculators?                                                                                       |   | X |   | X |  |  |   | X |  |  |  |
| In "calculator" problems?                                                                                                                  | X |   |   | X |  |  | X |   |  |  |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |   |   |   |  |  |   |   |  |  |  |
| Are they used:                                                                                                                             |   |   |   |   |  |  |   |   |  |  |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |   | X |   |  |  |   |   |  |  |  |
| Continuously as ideas are developed?                                                                                                       |   |   | X |   |  |  |   |   |  |  |  |
| Do students work with pictures, drawings, and other representations?                                                                       |   | X |   | X |  |  | X | X |  |  |  |
| <b>E. Situational Lessons</b>                                                                                                              |   |   |   |   |  |  |   |   |  |  |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |   | X |   |  |  |   |   |  |  |  |
| Do the lessons provide for:                                                                                                                |   |   |   |   |  |  |   |   |  |  |  |
| Several problems to be identified?                                                                                                         |   |   | X |   |  |  |   |   |  |  |  |
| A variety of approaches to be used?                                                                                                        |   |   | X |   |  |  |   |   |  |  |  |
| Study over several class periods?                                                                                                          |   |   | X |   |  |  |   |   |  |  |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |   |   |   |  |  |   |   |  |  |  |
| Are students:                                                                                                                              |   |   |   |   |  |  |   |   |  |  |  |
| Taught cooperative learning techniques?                                                                                                    |   |   | X |   |  |  |   |   |  |  |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |   | X |   |  |  |   |   |  |  |  |

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

On request one free teacher's guide is provided with every purchase of ten textbooks. This teacher's guide is meant to be a resource for the teacher in checking the student's work and in planning for further instruction. The teacher's guide includes reproducible masters for practice and tests. Also on request the answer key for the student's workbook is provided free when ten students' workbooks are purchased.

##### 2. Description of the teacher's edition

- ☐ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

A teacher's guide, an answer key, and reproducible supplementary exercises are provided (see the description above).

##### 3. Description of teacher's resource materials

Blackline masters

##### 4. Description of related materials available for sale

Student's workbook  
Workbook answer key  
Correlated software package

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                          |    |                                          |    |                                             |     |
|------------------------------------------|----|------------------------------------------|----|---------------------------------------------|-----|
| Proficiency Test 1 .....                 | 1  | 4. Games of Chance .....                 | 47 | 7. Fractions in the Home .....              | 89  |
| 1. Counting Calories .....               | 5  | Flipping Coins .....                     | 48 | Multiplication of Fractions .....           | 89  |
| What Is a Calorie? .....                 | 5  | What Are the Chances? .....              | 49 | Division of Mixed Numbers and Fractions ... | 92  |
| Adding Calories .....                    | 6  | Probability When Rolling Dice .....      | 50 | Addition of Fractions .....                 | 94  |
| Estimating Calories Used .....           | 12 | Using Probability .....                  | 52 | Subtraction of Fractions .....              | 96  |
| Subtracting Calories .....               | 13 | Experimental Probability .....           | 55 | Computer Practice 7 .....                   | 97  |
| Adding and Subtracting Calories .....    | 14 | Making Predictions .....                 | 56 | Calculator Practice 7 .....                 | 98  |
| Calculator Practice 1 .....              | 15 | Cards .....                              | 57 | Test .....                                  | 99  |
| Computer Practice 1 .....                | 15 | Calculator Practice 4 .....              | 61 |                                             |     |
| Test .....                               | 16 | Computer Practice 4 .....                | 61 | 8. Spending Money .....                     | 100 |
| 2. Home Improvement .....                | 17 | Test .....                               | 62 | Decimals and Place Value .....              | 100 |
| Painting Walls .....                     | 18 | 5. Adjusting Recipes .....               | 64 | Addition of Decimals .....                  | 104 |
| Buying Carpet by the Foot .....          | 21 | Multiplication of Fractions .....        | 64 | Adding Prices .....                         | 104 |
| Division of Whole Numbers .....          | 22 | Increasing a Recipe by Multiplying ..... | 67 | Calculator Practice 8 .....                 | 106 |
| Buying Carpet by the Square Yard .....   | 23 | Decreasing a Recipe by Dividing .....    | 72 | Computer Practice 8 .....                   | 106 |
| Buying Floor Tiles .....                 | 24 | Calculator Practice 5 .....              | 74 | Subtraction with Decimals .....             | 107 |
| Estimating the Amount of Wallpaper ..... | 26 | Computer Practice 5 .....                | 74 | Adding and Subtracting Money .....          | 108 |
| Calculator Practice 2 .....              | 28 | Test .....                               | 75 | Test .....                                  | 109 |
| Computer Practice 2 .....                | 28 |                                          |    | 9. Earning Money .....                      | 110 |
| Test .....                               | 29 | 6. Working with Fabric .....             | 76 | Multiplication of Decimals .....            | 110 |
| 3. Using Mathematics in Sports .....     | 31 | Working with a Fabric Guide .....        | 78 | Overtime Earnings .....                     | 117 |
| Bowling .....                            | 31 | Macrame .....                            | 80 | Division of Decimals .....                  | 121 |
| Weight Lifting .....                     | 40 | Saving Scraps .....                      | 83 | Dividing Gross Pay .....                    | 123 |
| Averages .....                           | 42 | Repeating Patterns .....                 | 85 | Calculator Practice 9 .....                 | 124 |
| Calculator Practice 3 .....              | 44 | Calculator Practice 6 .....              | 86 | Computer Practice 9 .....                   | 124 |
| Computer Practice 3 .....                | 45 | Computer Practice 6 .....                | 86 | Test .....                                  | 126 |
| Test .....                               | 46 | Test .....                               | 87 | Proficiency Test 2 .....                    | 127 |

| PUBLISHER             | TITLE                          | COPYRIGHT |
|-----------------------|--------------------------------|-----------|
| Media Materials, Inc. | <i>Life Skills Mathematics</i> | 1983      |

## Part B. Table of Contents—Continued

|                                      |     |                                           |     |                                     |     |
|--------------------------------------|-----|-------------------------------------------|-----|-------------------------------------|-----|
| <b>10. Traveling</b> .....           | 131 | Won-Lost Percentage .....                 | 166 | Life Insurance .....                | 208 |
| Odometer Reading .....               | 132 | Calculator Practice 12 .....              | 167 | Test .....                          | 211 |
| Calculator Practice 10 .....         | 133 | Games Back .....                          | 168 | Computer Practice 15 .....          | 213 |
| Gas Mileage .....                    | 134 | Computer Practice 12 .....                | 169 | <b>16. Lawn Care</b> .....          | 214 |
| Gasoline Prices .....                | 135 | Test .....                                | 170 | Enclosing Your Yard .....           | 216 |
| Computer Practice 10 .....           | 136 | <b>13. Using Percent</b> .....            | 172 | Measuring in Centimeters .....      | 218 |
| Car Rental Rates .....               | 137 | Sales Tax .....                           | 173 | Using a Scale Drawing .....         | 219 |
| Using a Map .....                    | 138 | Discount .....                            | 174 | Fertilizing Your Yard .....         | 221 |
| Gas Consumption .....                | 139 | Personal Spending .....                   | 176 | Concrete .....                      | 223 |
| Hotel Rates .....                    | 141 | Personal Saving .....                     | 178 | Calculator Practice 16 .....        | 224 |
| Currency Conversion .....            | 142 | Calculator and Computer Practice 13 ..... | 182 | Computer Practice 16 .....          | 224 |
| Cruise Rates .....                   | 144 | Computer Practice 13 .....                | 182 | Test .....                          | 225 |
| Test .....                           | 145 | Test .....                                | 183 | <b>17. Using Energy</b> .....       | 227 |
| <b>11. Watching the Clock</b> .....  | 147 | <b>14. Working with Interest</b> .....    | 184 | Electricity .....                   | 227 |
| Elapsed Time .....                   | 148 | Simple Interest .....                     | 184 | Reading the Meter .....             | 230 |
| Television Schedules .....           | 152 | Compound Interest .....                   | 187 | The Electric Bill .....             | 232 |
| Parking Meters .....                 | 153 | Borrowing Money .....                     | 188 | Calculator Practice 17 .....        | 233 |
| Bus Schedules .....                  | 154 | Credit .....                              | 191 | Computer Practice 17 .....          | 233 |
| Calculator Practice 11 .....         | 155 | Calculator Practice 14 .....              | 193 | Gas .....                           | 234 |
| Parking Lot Rates .....              | 156 | Computer Practice 14 .....                | 193 | Temperature .....                   | 236 |
| Computer Practice 11 .....           | 157 | Test .....                                | 194 | Test .....                          | 238 |
| Test .....                           | 158 | <b>15. Insurance</b> .....                | 195 | Proficiency Test 3 .....            | 239 |
| <b>12. Baseball Statistics</b> ..... | 159 | Health Insurance .....                    | 197 | <b>Supplementary Problems</b> ..... | 243 |
| Batting Averages .....               | 160 | Home Insurance .....                      | 199 | <b>Review of Basic Skills</b> ..... | 271 |
| Slugging Percentages .....           | 161 | Calculator Practice 15 .....              | 203 | Index .....                         | 285 |
| Baserunning Average .....            | 163 | Fire Insurance .....                      | 204 |                                     |     |
| Fielding Percentage .....            | 164 | Auto Insurance .....                      | 205 |                                     |     |
| Earned Run Average .....             | 165 |                                           |     |                                     |     |



| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

*MATHEMATICS IN LIFE* is for students in grades nine and ten who are not college preparatory but who might enter that sequence. This textbook fulfills the description for "Math A" on page 38 of the *Mathematics Framework for California Public Schools, Kindergarten Through Grade Twelve*.

Program highlights are as follows:

- Each chapter contains sections on skills and problem solving, with pretests and post-tests in both sections.
- Simple step-by-step examples and solutions are provided.

- Lessons are easy because reading is kept to a minimum.
- Useful mathematics is stressed: Actual consumer and business forms are reproduced throughout the textbook, and computer literacy involvement prepares students for the job market.
- Strong emphasis is placed on problem-solving strategies and common-sense estimation.
- Optional activities are "Computer Literacy," "Calculator Applications," and "Break Times."

| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                |                                                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum |                                                                                                              |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | ****                                           | Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | ***                                            | Means mainly high school core content but some from other levels                                             |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | **                                             | Means mainly from other levels but some from high school core content                                        |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | *                                              | Means little or no match with high school core content                                                       |
|                                                                                       | <i>Blank</i>                                   | Means there is no material that matches the high school core curriculum                                      |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | **                                     |
| Using rational numbers                                        | H                  | *                                      |
| Using irrational numbers                                      | L                  | *                                      |
| Evaluating expressions with roots, powers, and absolute value | M                  | *                                      |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  | *                                      |
| Converting within a measurement system                        | M                  | *                                      |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  | *                                      |
| Determining theoretical and empirical probability         | M                  | *                                      |
| Determining measures of central tendency                  | M                  | *                                      |
| Interpreting data and making inferences                   | M                  | *                                      |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |

|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Measurement—Continued</b>                                                |   |     |
| Using formulas to determine measures                                        | H | *   |
| <b>C. Geometry</b>                                                          |   |     |
| Using geometric properties of plane and solid figures to determine measures | H | *** |
| Constructing standard straightedge compass figures                          | N |     |
| Making models, scale drawings, orthographic projections                     | M | *   |
| Establishing congruence, similarity, symmetry                               | M | *   |
| Using coordinate geometry                                                   | H | **  |
| <b>D. Patterns and Functions</b>                                            |   |     |
| Determining and extending patterns                                          | M | *   |
| Graphing functions and investigating their properties                       | M | *   |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N | *  |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | M | *  |
| Evaluating algebraic expressions                                            | M | ** |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | H | ** |

| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                        |
|------------------------------------------------------------|
| Extent Included                                            |
| <i>Substantially</i> means integrated throughout the book. |
| <i>Somewhat</i> means taught at least occasionally.        |
| <i>Little or none</i> means little or none.                |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             |                                                     |                  |                   | X               |                      |
|                 | X        |                | X                 | X                 |                             |                                                     | X                |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 | X                 |                             | X                                                   | X                |                   |                 | X                    |
|                 | X        |                |                   |                   |                             | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             |                                                     | X                |                   |                 |                      |
|                 | X        |                | X                 | X                 |                             |                                                     | X                |                   |                 |                      |

|                                                                                                                                                    |   |  |   |   |   |  |   |   |  |   |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------|---|--|---|---|---|--|---|---|--|---|--|
| <b>C. Use of Calculators</b>                                                                                                                       |   |  |   |   |   |  |   |   |  |   |  |
| Are they used:<br>To illustrate and/or develop concepts?                                                                                           |   |  | X |   |   |  |   |   |  |   |  |
| In lessons designed to teach how to use<br>calculators?                                                                                            | X |  |   | X | X |  |   | X |  | X |  |
| In "calculator" problems?                                                                                                                          | X |  |   | X | X |  |   | X |  | X |  |
| <b>D. Use of Concrete Materials</b>                                                                                                                |   |  |   |   |   |  |   |   |  |   |  |
| Are they used:<br>When new concepts are introduced or when<br>difficult problems are encountered?                                                  |   |  | X |   |   |  |   |   |  |   |  |
| Continuously as ideas are developed?                                                                                                               |   |  | X |   |   |  |   |   |  |   |  |
| Do students work with pictures, drawings, and<br>other representations?                                                                            | X |  |   | X | X |  | X |   |  |   |  |
| <b>E. Situational Lessons</b>                                                                                                                      |   |  |   |   |   |  |   |   |  |   |  |
| Are lessons included which begin with a de-<br>scription of an interesting, challenging situation<br>from which a number of activities can emerge? |   |  | X | X | X |  |   |   |  | X |  |
| Do the lessons provide for:<br>Several problems to be identified?                                                                                  |   |  | X | X | X |  |   |   |  |   |  |
| A variety of approaches to be used?                                                                                                                |   |  | X | X | X |  |   |   |  |   |  |
| Study over several class periods?                                                                                                                  |   |  | X | X | X |  |   |   |  |   |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                              |   |  |   |   |   |  |   |   |  |   |  |
| Are students:<br>Taught cooperative learning techniques?                                                                                           |   |  | X |   |   |  |   |   |  |   |  |
| Given problems which are specifically<br>designed to be solved in groups?                                                                          |   |  | X |   |   |  |   |   |  |   |  |

| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

Teachers' editions will be supplied on request when *Mathematics in Life* is purchased.

Reproducible blackline masters for multiple-choice unit tests, end-of-book tests, and competency tests are included with each teacher's edition.

##### 2. Description of the teacher's edition

- ☒ Annotated
- ☐ Teaching notes
- ☐ Answers/placement

##### 3. Description of teacher's resource materials

See related teacher's resource materials below.

##### 4. Description of related materials available for sale

Problem-solving masters provide applications on 64 duplicating masters that reinforce and extend problem-solving lessons in the students' textbooks. Also included are real-life consumer forms, such as checks, deposit slips, and so forth. This material is available on blackline or duplicating masters.

Test masters contain alternative forms of each chapter, unit, end-of-book, and competency test on 60 blackline or duplicating masters.

The solution key provides answers to all exercises. Answers for most consumer and career applications problems are worked out.



| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

|                                                                           |                                             |                                                                                   |                                                                  |                                                              |     |
|---------------------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------|-----|
| <b>1. Adding and Subtracting Whole Numbers</b>                            | Dividing with Two-Digit Divisors . . . . .  | 50                                                                                | <i>Problem Solving</i>                                           | <b>8. Adding and Subtracting Fractions and Mixed Numbers</b> |     |
| <i>Skills</i>                                                             | Dividing with Zeros in the Quotient . . . . | 52                                                                                | Developing Strategies Tactic: Selecting Necessary Data . . . . . | 118                                                          |     |
| Rounding Whole Numbers . . . . .                                          | 4                                           | Dividing with Three-Digit Divisors . . . .                                        | 53                                                               | <i>Skills</i>                                                |     |
| Estimating Sums and Differences . . . . .                                 | 5                                           | Using Order of Operations . . . . .                                               | 54                                                               | Finding Common Denominators . . . . .                        | 172 |
| Adding Whole Numbers . . . . .                                            | 6                                           | Solving Multiplication and Division Equations . . . . .                           | 56                                                               | Comparing Fractions and Mixed Numbers . . . . .              | 173 |
| Subtracting Whole Numbers . . . . .                                       | 8                                           | <i>Problem Solving</i>                                                            |                                                                  | Adding and Subtracting Fractions . . . . .                   | 174 |
| Using Order of Operations . . . . .                                       | 10                                          | Developing Strategies Tactics: Reading a Table, Interpreting Remainders . . . . . | 68                                                               | Adding Mixed Numbers . . . . .                               | 176 |
| Solving Addition and Subtraction Equations . . . . .                      | 12                                          | <b>4. Adding and Subtracting Decimals</b>                                         |                                                                  | Subtracting Mixed Numbers: Same Denominator . . . . .        | 178 |
| <i>Problem Solving</i>                                                    |                                             | <i>Skills</i>                                                                     |                                                                  | Subtracting Mixed Numbers: Different Denominator . . . . .   | 180 |
| Developing Strategies Tactic: Reading a Scale . . . . .                   | 22                                          | Writing and Comparing Decimals . . . . .                                          | 76                                                               | <i>Problem Solving</i>                                       |     |
| <b>2. Multiplying Whole Numbers</b>                                       |                                             | Adding Decimals . . . . .                                                         | 78                                                               | Developing Strategies Tactic: Drawing a Picture . . . . .    | 190 |
| <i>Skills</i>                                                             |                                             | Subtracting Decimals . . . . .                                                    | 80                                                               | <b>9. Probability</b>                                        |     |
| Multiplying with Multiples of 10, 100, and 1,000 . . . . .                | 26                                          | Rounding Decimals . . . . .                                                       | 82                                                               | <i>Skills</i>                                                |     |
| Estimating Products . . . . .                                             | 27                                          | Estimating Sums and Differences . . . . .                                         | 83                                                               | Finding Probabilities and Predicting Outcomes . . . . .      | 194 |
| Multiplying with One-Digit Multipliers . . . . .                          | 28                                          | <i>Problem Solving</i>                                                            |                                                                  | Finding Probabilities by Using Tree Diagrams . . . . .       | 196 |
| Multiplying with Two-Digit Multipliers . . . . .                          | 30                                          | Developing Strategies Tactic: Obtaining Information from a Picture . . . . .      | 92                                                               | Finding Probabilities by Using Multiplication . . . . .      | 198 |
| Multiplying with Three-Digit Multipliers . . . . .                        | 32                                          | <b>5. Multiplying and Dividing Decimals</b>                                       |                                                                  | Finding Probabilities Involving Dependent Events . . . . .   | 200 |
| Using Order of Operations . . . . .                                       | 34                                          | <i>Skills</i>                                                                     |                                                                  | <i>Problem Solving</i>                                       |     |
| <i>Problem Solving</i>                                                    |                                             | Multiplying Decimals . . . . .                                                    | 96                                                               | Developing Strategies Tactic: Using a Simpler Case . . . . . | 208 |
| Developing Strategies Tactics: Reading a Table, Using a Formula . . . . . | 44                                          | Estimating Products . . . . .                                                     | 98                                                               | <b>10. Ratio, Proportion, and Similarity</b>                 |     |
| <b>3. Dividing Whole Numbers</b>                                          |                                             | Dividing a Decimal by a Whole Number . . . . .                                    | 100                                                              | <i>Skills</i>                                                |     |
| <i>Skills</i>                                                             |                                             | Multiplying and Dividing a Decimal by 10, 100, or 1,000 . . . . .                 | 102                                                              | Writing Ratios . . . . .                                     | 216 |
| Dividing with One-Digit Divisors . . . . .                                | 48                                          | Dividing Decimals . . . . .                                                       | 104                                                              |                                                              |     |
|                                                                           |                                             | Rounding Quotients . . . . .                                                      | 106                                                              |                                                              |     |
|                                                                           |                                             | <i>Problem Solving</i>                                                            |                                                                  |                                                              |     |
|                                                                           |                                             | Developing Strategies Tactic: Using Estimated Information . . . . .               | 168                                                              |                                                              |     |
|                                                                           |                                             | <b>6. The Metric System</b>                                                       |                                                                  |                                                              |     |
|                                                                           |                                             | <i>Skills</i>                                                                     |                                                                  |                                                              |     |
|                                                                           |                                             | Estimating and Measuring Length . . . . .                                         | 123                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Length . . . . .                                                   | 124                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Area . . . . .                                                     | 126                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Volume . . . . .                                                   | 127                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Capacity . . . . .                                                 | 128                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Mass . . . . .                                                     | 129                                                              |                                                              |     |
|                                                                           |                                             | Relating Units of Volume, Capacity, and Mass . . . . .                            | 130                                                              |                                                              |     |
|                                                                           |                                             | Using Units of Temperature . . . . .                                              | 131                                                              |                                                              |     |
|                                                                           |                                             | <i>Problem Solving</i>                                                            |                                                                  |                                                              |     |
|                                                                           |                                             | Developing Strategies Tactic: Measuring . . . . .                                 | 142                                                              |                                                              |     |
|                                                                           |                                             | <b>7. Multiplying and Dividing Fractions and Mixed Numbers</b>                    |                                                                  |                                                              |     |
|                                                                           |                                             | <i>Skills</i>                                                                     |                                                                  |                                                              |     |
|                                                                           |                                             | Writing Fractions and Mixed Numbers . . . . .                                     | 150                                                              |                                                              |     |
|                                                                           |                                             | Renaming Fractions and Mixed Numbers . . . . .                                    | 152                                                              |                                                              |     |
|                                                                           |                                             | Writing Fractions as Decimals . . . . .                                           | 153                                                              |                                                              |     |
|                                                                           |                                             | Multiplying Fractions . . . . .                                                   | 154                                                              |                                                              |     |
|                                                                           |                                             | Multiplying Mixed Numbers . . . . .                                               | 156                                                              |                                                              |     |
|                                                                           |                                             | Dividing Fractions and Mixed Numbers . . . . .                                    | 158                                                              |                                                              |     |
|                                                                           |                                             | <i>Problem Solving</i>                                                            |                                                                  |                                                              |     |
|                                                                           |                                             | Developing Strategies Tactic: Using Estimated Information . . . . .               | 168                                                              |                                                              |     |

| PUBLISHER                   | TITLE                                      | COPYRIGHT |
|-----------------------------|--------------------------------------------|-----------|
| Scott, Foresman and Company | <i>Mathematics in Life, Second Edition</i> | 1985      |

## Part B. Table of Contents—Continued

### 10. Ratio, Proportion, and Similarity—Continued

|                                                  |     |
|--------------------------------------------------|-----|
| Solving Proportions .....                        | 218 |
| Identifying Similar Figures .....                | 220 |
| Finding Missing Sides in Similar Triangles ..... | 222 |

#### Problem Solving

|                                                                                 |     |
|---------------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Using Proportions, Interpreting Remainders ..... | 232 |
|---------------------------------------------------------------------------------|-----|

### 11. Percent

#### Skills

|                                                |     |
|------------------------------------------------|-----|
| Writing Percents and Decimals .....            | 236 |
| Writing Percents and Fractions .....           | 238 |
| Finding a Percent of a Number .....            | 240 |
| Finding a Percent .....                        | 242 |
| Finding a Number When a Percent Is Known ..... | 244 |

#### Problem Solving

|                                                                                         |     |
|-----------------------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Reading a Table, Reading a Scale, Working Backward ..... | 254 |
|-----------------------------------------------------------------------------------------|-----|

### 12. Statistics

#### Skills

|                                         |     |
|-----------------------------------------|-----|
| Finding the Mean .....                  | 259 |
| Finding the Median and the Mode .....   | 260 |
| Reading and Making a Bar Graph .....    | 262 |
| Reading and Making a Line Graph .....   | 264 |
| Reading and Making a Circle Graph ..... | 266 |

#### Problem Solving

|                                                                        |     |
|------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Making a Table, Interpreting Data ..... | 276 |
|------------------------------------------------------------------------|-----|

### 13. Positive and Negative Numbers

#### Skills

|                                                          |     |
|----------------------------------------------------------|-----|
| Writing and Ordering Positive and Negative Numbers ..... | 284 |
| Adding Positive and Negative Numbers .....               | 286 |
| Subtracting Positive and Negative Numbers .....          | 288 |
| Multiplying Positive and Negative Numbers .....          | 290 |
| Dividing Positive and Negative Numbers .....             | 292 |

#### Problem Solving

|                                                                          |     |
|--------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Using Positive and Negative Numbers ..... | 300 |
|--------------------------------------------------------------------------|-----|

### 14. Expressions and Equations

#### Skills

|                                                            |     |
|------------------------------------------------------------|-----|
| Evaluating Expressions .....                               | 304 |
| Evaluating Expressions Involving Order of Operations ..... | 306 |
| Solving Addition and Subtraction Equations .....           | 308 |
| Solving Multiplication and Division Equations .....        | 310 |
| Solving Two-Step Equations .....                           | 312 |
| Combining Like Terms to Solve Equations .....              | 314 |

#### Problem Solving

|                                                                      |     |
|----------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Using a Formula, Making a Graph ..... | 324 |
|----------------------------------------------------------------------|-----|

### 15. Graphing

#### Skills

|                                                   |     |
|---------------------------------------------------|-----|
| Locating Points on a Grid .....                   | 329 |
| Reading and Making Graphs on a Grid .....         | 330 |
| Locating Points in Four Quadrants .....           | 332 |
| Reading and Making Graphs in Four Quadrants ..... | 334 |

#### Problem Solving

|                                                                      |     |
|----------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Reading and Interpreting Graphs ..... | 344 |
|----------------------------------------------------------------------|-----|

### 16. Perimeter and Area

#### Skills

|                                                                  |     |
|------------------------------------------------------------------|-----|
| Finding Perimeter of a Geometric Figure .....                    | 352 |
| Finding Circumference of a Circle .....                          | 354 |
| Finding Area of a Rectangle, a Square, and a Parallelogram ..... | 356 |
| Finding Area of a Triangle and a Trapezoid .....                 | 358 |
| Finding Area of a Circle .....                                   | 360 |

#### Problem Solving

|                                                                                                                      |     |
|----------------------------------------------------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Obtaining Information from a Picture, Using a Formula, Selecting Necessary Data ..... | 368 |
|----------------------------------------------------------------------------------------------------------------------|-----|

### 17. Surface Area and Volume

#### Skills

|                                                   |     |
|---------------------------------------------------|-----|
| Finding Surface Area of a Rectangular Prism ..... | 373 |
| Finding Surface Area of a Cube .....              | 374 |

|                                                        |     |
|--------------------------------------------------------|-----|
| Finding Surface Area of a Cylinder .....               | 375 |
| Finding Volume of a Rectangular Prism and a Cube ..... | 376 |
| Finding Volume of a Cylinder .....                     | 378 |
| Finding Volume of a Pyramid and a Cone .....           | 380 |
| Finding Volume of a Sphere .....                       | 382 |

#### Problem Solving

|                                                                                                             |     |
|-------------------------------------------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Obtaining Information from a Picture, Using a Formula, Reading a Table ..... | 390 |
|-------------------------------------------------------------------------------------------------------------|-----|

### 18. The Pythagorean Rule and Trigonometry

#### Skills

|                                                   |     |
|---------------------------------------------------|-----|
| Using Exponents and Square Roots .....            | 395 |
| Reading a Table of Squares and Square Roots ..... | 396 |
| Using the Pythagorean Rule .....                  | 398 |
| Writing Trigonometric Ratios .....                | 400 |
| Reading a Table of Trigonometric Ratios .....     | 402 |
| Using Trigonometric Ratios .....                  | 404 |

#### Problem Solving

|                                                                                    |     |
|------------------------------------------------------------------------------------|-----|
| Developing Strategies Tactics: Drawing a Picture, Using Trigonometric Ratios ..... | 412 |
|------------------------------------------------------------------------------------|-----|

"Consumer Applications" and "Career Applications" appear in the "Problem Solving" section of each chapter.

| PUBLISHER                                        | TITLE                         | COPYRIGHT |
|--------------------------------------------------|-------------------------------|-----------|
| University of Chicago School Mathematics Project | <i>Transition Mathematics</i> | 1985      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

*TRANSITION MATHEMATICS* is intended for students who score at grade levels between 7.0 and 8.5 in September on standardized tests (irrespective of the student's age). This textbook is designed to prepare such students to enroll in an algebra course the following year and a geometry course a year later.

Scientific calculators are required, for which applications abound.

Problem solving is a constant theme. There is continual review and a modified mastery approach on skills.

Testing shows that students in this course keep the same paper-and-pencil arithmetic skills and are far better prepared for algebra and geometry than are students in comparable classes.

| PUBLISHER                                        | TITLE                         | COPYRIGHT |
|--------------------------------------------------|-------------------------------|-----------|
| University of Chicago School Mathematics Project | <i>Transition Mathematics</i> | 1985      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                |                                                                                                              |
|---------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum |                                                                                                              |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | ****                                           | Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | ***                                            | Means mainly high school core content but some from other levels                                             |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | **                                             | Means mainly from other levels but some from high school core content                                        |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | *                                              | Means little or no match with high school core content                                                       |
|                                                                                       | <i>Blank</i>                                   | Means there is no material that matches the high school core curriculum                                      |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | ***                                    |
| Using rational numbers                                        | H                  | ***                                    |
| Using irrational numbers                                      | L                  | ***                                    |
| Evaluating expressions with roots, powers, and absolute value | H                  | ***                                    |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | L                  | ***                                    |
| Converting within a measurement system                        | H                  | ***                                    |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | N                  |                                        |
| Interpreting data and making inferences                   | N                  |                                        |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | M                  | **                                     |

|                                                                             |   |     |
|-----------------------------------------------------------------------------|---|-----|
| <b>Measurement—Continued</b>                                                |   |     |
| Using formulas to determine measures                                        | H | *** |
| <b>C. Geometry</b>                                                          |   |     |
| Using geometric properties of plane and solid figures to determine measures | H | *** |
| Constructing standard straightedge compass figures                          | L | *   |
| Making models, scale drawings, orthographic projections                     | M | **  |
| Establishing congruence, similarity, symmetry                               | M | *** |
| Using coordinate geometry                                                   | M | **  |
| <b>D. Patterns and Functions</b>                                            |   |     |
| Determining and extending patterns                                          | H | **  |
| Graphing functions and investigating their properties                       | M | **  |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | H | *  |
| Evaluating algebraic expressions                                            | H | ** |
| Solving equations and inequalities                                          | H | ** |
| Solving problems involving direct and inverse variation, including percents | M | ** |

| PUBLISHER                                        | TITLE                  | COPYRIGHT |
|--------------------------------------------------|------------------------|-----------|
| University of Chicago School Mathematics Project | Transition Mathematics | 1985      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                        |
|------------------------------------------------------------|
| Extent Included                                            |
| <i>Substantially</i> means integrated throughout the book. |
| <i>Somewhat</i> means taught at least occasionally.        |
| <i>Little or none</i> means little or none.                |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 |                   | X                           | X                                                   |                  | X                 |                 | X                    |
|                 | X        |                | X                 |                   | X                           | X                                                   |                  | X                 |                 | X                    |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 | X        |                | X                 |                   |                             |                                                     | X                |                   |                 | X                    |
|                 |          | X              | X                 |                   |                             |                                                     |                  |                   |                 | X                    |
|                 | X        |                | X                 |                   |                             | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 |                   |                             | X                                                   |                  |                   |                 |                      |
|                 | X        |                | X                 |                   |                             | X                                                   |                  |                   |                 |                      |



|                                                                                                                                            |   |  |   |   |  |   |   |   |  |  |   |
|--------------------------------------------------------------------------------------------------------------------------------------------|---|--|---|---|--|---|---|---|--|--|---|
| <b>C. Use of Calculators</b>                                                                                                               |   |  |   |   |  |   |   |   |  |  |   |
| Are they used:                                                                                                                             |   |  |   |   |  |   |   |   |  |  |   |
| To illustrate and/or develop concepts?                                                                                                     | X |  |   | X |  | X | X | X |  |  | X |
| In lessons designed to teach how to use calculators?                                                                                       | X |  |   | X |  | X | X | X |  |  | X |
| In "calculator" problems?                                                                                                                  | X |  |   | X |  | X | X | X |  |  | X |
| <b>D. Use of Concrete Materials</b>                                                                                                        |   |  |   |   |  |   |   |   |  |  |   |
| Are they used:                                                                                                                             |   |  |   |   |  |   |   |   |  |  |   |
| When new concepts are introduced or when difficult problems are encountered?                                                               |   |  | X | X |  |   |   |   |  |  |   |
| Continuously as ideas are developed?                                                                                                       |   |  | X | X |  |   |   |   |  |  |   |
| Do students work with pictures, drawings, and other representations?                                                                       | X |  |   | X |  | X | X |   |  |  | X |
| <b>E. Situational Lessons</b>                                                                                                              |   |  |   |   |  |   |   |   |  |  |   |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |   |  | X |   |  |   |   |   |  |  |   |
| Do the lessons provide for:                                                                                                                |   |  |   |   |  |   |   |   |  |  |   |
| Several problems to be identified?                                                                                                         |   |  | X |   |  |   |   |   |  |  |   |
| A variety of approaches to be used?                                                                                                        |   |  | X |   |  |   |   |   |  |  |   |
| Study over several class periods?                                                                                                          |   |  | X |   |  |   |   |   |  |  |   |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |   |  |   |   |  |   |   |   |  |  |   |
| Are students:                                                                                                                              |   |  |   |   |  |   |   |   |  |  |   |
| Taught cooperative learning techniques?                                                                                                    |   |  | X |   |  |   |   |   |  |  |   |
| Given problems which are specifically designed to be solved in groups?                                                                     |   |  | X |   |  |   |   |   |  |  |   |

| PUBLISHER                                        | TITLE                         | COPYRIGHT |
|--------------------------------------------------|-------------------------------|-----------|
| University of Chicago School Mathematics Project | <i>Transition Mathematics</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The teacher's notes are provided free of charge to each teacher using this material. Additional copies are available for purchase. The teacher's notes contain quizzes, tests, and cumulative tests for each chapter; cumulative tests for chapters 1 through 3, 4 through 6, 7 through 9, and 10 through 13; and semester and final tests, all with answers.

##### 2. Description of the teacher's edition

- ☐ Annotated
- ☒ Teaching notes
- ☒ Answers/placement

##### 3. Description of teacher's resource materials

Teacher's resource materials are included in the teacher's notes. See the previous description.

##### 4. Description of related materials available for sale

*University of Chicago School Mathematics Project Algebra* will be available in a preliminary form in spring, 1987.

| PUBLISHER                                        | TITLE                         | COPYRIGHT |
|--------------------------------------------------|-------------------------------|-----------|
| University of Chicago School Mathematics Project | <i>Transition Mathematics</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### 1. Decimal Notation

|                                                  |    |
|--------------------------------------------------|----|
| Decimals for Whole Numbers .....                 | 3  |
| Decimals for Numbers Between Whole Numbers ..... | 6  |
| Estimating by Rounding Up or Rounding Down ..... | 11 |
| Estimating by Rounding to the Nearest .....      | 14 |
| Negative Numbers .....                           | 17 |
| Symbols for Inequality .....                     | 21 |
| Knowing Your Calculator .....                    | 24 |
| Decimals for Simple Fractions .....              | 27 |
| Decimals for Mixed Numbers .....                 | 32 |
| Equal Fractions .....                            | 35 |

##### 2. Large and Small Numbers

|                                             |    |
|---------------------------------------------|----|
| Multiplying by 10 .....                     | 47 |
| Powers .....                                | 51 |
| Scientific Notation for Large Numbers ..... | 55 |
| Multiplying by 1/10 or .1 .....             | 59 |
| Percent .....                               | 62 |
| Percents of .....                           | 65 |
| Fractions, Decimals, and Percents .....     | 69 |
| More Powers of Ten .....                    | 72 |
| Scientific Notation for Small Numbers ..... | 76 |

##### 3. Measurement

|                                                         |    |
|---------------------------------------------------------|----|
| Measuring Length .....                                  | 85 |
| The U.S. System of Measurement .....                    | 90 |
| The International or Metric System of Measurement ..... | 94 |
| Converting Between Systems .....                        | 98 |

|                        |     |
|------------------------|-----|
| Measuring Angles ..... | 101 |
| Kinds of Angles .....  | 106 |
| Measuring Area .....   | 110 |
| Measuring Volume ..... | 114 |

##### 4. Uses of Variables

|                                          |     |
|------------------------------------------|-----|
| Order of Operations .....                | 125 |
| Describing Patterns with Variables ..... | 129 |
| Translating Expressions .....            | 133 |
| Evaluating Algebraic Expressions .....   | 137 |
| Parentheses .....                        | 140 |
| Formulas .....                           | 144 |
| Grouping Symbols .....                   | 147 |
| Open Sentences .....                     | 152 |
| Inequalities .....                       | 155 |

##### 5. Patterns Leading to Addition

|                                                  |     |
|--------------------------------------------------|-----|
| The Putting-Together Model for Addition .....    | 167 |
| Adding Fractions .....                           | 171 |
| The Slide Model for Addition .....               | 175 |
| Zero and Opposites .....                         | 178 |
| Adding Positives and Negative Numbers .....      | 181 |
| Turns .....                                      | 185 |
| The Commutative and Associative Properties ..... | 189 |
| Solving $x + a = b$ .....                        | 193 |
| Polygons .....                                   | 198 |
| Adding Lengths .....                             | 202 |

##### 6. Problem-Solving Strategies

|                                   |     |
|-----------------------------------|-----|
| Being a Good Problem Solver ..... | 215 |
|-----------------------------------|-----|

|                                |     |
|--------------------------------|-----|
| Read Carefully .....           | 219 |
| Draw a Picture .....           | 222 |
| Trial and Error .....          | 225 |
| Make a Table .....             | 228 |
| Work with a Special Case ..... | 232 |

##### 7. Patterns Leading to Subtraction

|                                            |     |
|--------------------------------------------|-----|
| The Take-Away Model for Subtraction .....  | 257 |
| The Slide Model for Subtraction .....      | 261 |
| The Comparison Model for Subtraction ..... | 265 |
| Solving $x - a = b$ .....                  | 269 |
| Equivalent Sentences and Formulas .....    | 272 |
| Solving $a - x = b$ .....                  | 275 |
| Angles and Lines .....                     | 278 |
| Angles and Parallel Lines .....            | 283 |
| Special Quadrilaterals .....               | 287 |
| The Triangle-Sum Property .....            | 291 |

##### 8. Displays

|                             |     |
|-----------------------------|-----|
| Bar Graphs .....            | 303 |
| Coordinate Graphs .....     | 307 |
| Graphing Equations .....    | 312 |
| Why Graph? .....            | 316 |
| Translations (Slides) ..... | 320 |
| Reflections .....           | 323 |
| Line Symmetry .....         | 327 |
| Tessellations .....         | 331 |

##### 9. Patterns Leading to Multiplication

|                                         |     |
|-----------------------------------------|-----|
| The Area Model for Multiplication ..... | 343 |
| Surface Area .....                      | 347 |

| PUBLISHER                                        | TITLE                         | COPYRIGHT |
|--------------------------------------------------|-------------------------------|-----------|
| University of Chicago School Mathematics Project | <i>Transition Mathematics</i> | 1985      |

## Part B. Table of Contents—Continued

|                                                    |     |                                             |     |                                      |     |
|----------------------------------------------------|-----|---------------------------------------------|-----|--------------------------------------|-----|
| Volumes of Rectangular Solids . . . . .            | 351 | 11. Patterns Leading to Division            |     | Square Roots . . . . .               | 495 |
| Dimensions and Units . . . . .                     | 355 | The Rate Model for Division . . . . .       | 427 | The Pythagorean Theorem . . . . .    | 499 |
| More Properties of Multiplication . . . . .        | 359 | Division of Fractions . . . . .             | 431 | Area of Any Triangle . . . . .       | 504 |
| Size Changes—Expansions . . . . .                  | 363 | Division with Negative Numbers . . . . .    | 434 | Areas of Polygons . . . . .          | 509 |
| Size Changes—Contractions . . . . .                | 367 | The Ratio Comparison Model for              |     | The Number $\pi$ . . . . .           | 513 |
| Multiply by $1/n$ . . . . .                        | 371 | Division . . . . .                          | 438 | Circles and Sectors . . . . .        | 517 |
| Multiplying Fractions . . . . .                    | 375 | Proportions . . . . .                       | 441 | Circle Graphs . . . . .              | 521 |
|                                                    |     | The Means-Extremes Property . . . . .       | 445 | Spheres . . . . .                    | 525 |
|                                                    |     | Proportions in Similar Figures . . . . .    | 449 | SPUR Mastery Self-Test Solutions and |     |
|                                                    |     | Proportional Thinking . . . . .             | 453 | SPUR Review Answers . . . . .        | 533 |
| 10. More Multiplication Patterns                   |     |                                             |     | Acknowledgments . . . . .            | 544 |
| Solving $ax = b$ . . . . .                         | 387 | 12. Combining Operations                    |     | Index . . . . .                      | 546 |
| The Multiplication Property of Equality . . . . .  | 390 | The Distributive Property . . . . .         | 463 |                                      |     |
| Using $ax = b$ . . . . .                           | 394 | Fractions for Repeating Decimals . . . . .  | 467 |                                      |     |
| The Rate Factor Model for Multiplication . . . . . | 398 | Linear Combinations . . . . .               | 470 |                                      |     |
| Multiplication with Negative Numbers . . . . .     | 402 | Solving $ax + b = cx + d$ . . . . .         | 474 |                                      |     |
| Picturing Multiplication with Negative             |     | More on the Distributive Property . . . . . | 478 |                                      |     |
| Numbers . . . . .                                  | 405 | Graphing Lines . . . . .                    | 482 |                                      |     |
| Multiplication by 0 and -1 . . . . .               | 409 |                                             |     |                                      |     |
| Solving $ax = b$ When $a$ Is Negative . . . . .    | 413 | 13. Measurement Formulas and Real Numbers   |     |                                      |     |
| Solving $ax + b = c$ . . . . .                     | 416 | Area of a Right Triangle . . . . .          | 491 |                                      |     |

Each chapter concludes with a "Chapter Summary," "SPUR Mastery Self-Test," and "SPUR Objectives and Review."

| PUBLISHER                   | TITLE                                         | COPYRIGHT |
|-----------------------------|-----------------------------------------------|-----------|
| West Educational Publishing | <i>Arithmetic: A Problem-Solving Approach</i> | 1985      |

## I. PUBLISHER'S DESCRIPTION OF THE TEXT AND INTENDED AUDIENCE

**A**RITHMETIC: A PROBLEM-SOLVING APPROACH is intended for the high school student interested in learning the mathematics skills needed to solve everyday problems. This textbook is designed to meet the learning needs of each student. Pretests open every chapter in Part I to help the teacher assess how much of each chapter students need to cover and what learning objectives are involved. Numerous problems

throughout the textbook give students plenty of practice. Word problems are identified by a picture key, indicating applications from a variety of fields, such as chemistry, business/economics, biology, and so forth. "Challenge" questions keep the advanced students interested; and a special appendix, "Practice Problem Sets," offers 1,800 extra exercises for slower students.

| PUBLISHER                   | TITLE                                         | COPYRIGHT |
|-----------------------------|-----------------------------------------------|-----------|
| West Educational Publishing | <i>Arithmetic: A Problem-Solving Approach</i> | 1985      |

## II. MATHEMATICS CONTENT

| DEFINITIONS OF TERMS AND SYMBOLS                                                      |                                                                                                                          |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Key for Degree of Emphasis                                                            | Key for Match with High School Core Curriculum                                                                           |
| <b>H</b> <i>High emphasis</i> means a chapter or more or lessons throughout the book. | <b>****</b> Means all or virtually all match the <i>Mathematics Framework's</i> description for high school core content |
| <b>M</b> <i>Moderate emphasis</i> means less than a chapter but more than one lesson. | <b>***</b> Means mainly high school core content but some from other levels                                              |
| <b>L</b> <i>Limited emphasis</i> means one lesson.                                    | <b>**</b> Means mainly from other levels but some from high school core content                                          |
| <b>N</b> <i>Little or no emphasis</i> means an occasional exercise or mention.        | <b>*</b> Means little or no match with high school core content                                                          |
|                                                                                       | <b>Blank</b> Means there is no material that matches the high school core curriculum                                     |

| Content                                                       | Degree of Emphasis | Match with High School Core Curriculum |
|---------------------------------------------------------------|--------------------|----------------------------------------|
| <b>A. Number</b>                                              |                    |                                        |
| Using signed numbers                                          | H                  | ****                                   |
| Using rational numbers                                        | H                  | ****                                   |
| Using irrational numbers                                      | L                  | **                                     |
| Evaluating expressions with roots, powers, and absolute value | M                  | **                                     |
| <b>B. Measurement</b>                                         |                    |                                        |
| Taking into account measurement precision                     | N                  |                                        |
| Converting within a measurement system                        | M                  | ****                                   |

| Content                                                   | Degree of Emphasis | Match with High School Core Curriculum |
|-----------------------------------------------------------|--------------------|----------------------------------------|
| <b>E. Statistics and Probability</b>                      |                    |                                        |
| Using counting procedures to solve combinatorial problems | N                  |                                        |
| Determining theoretical and empirical probability         | N                  |                                        |
| Determining measures of central tendency                  | N                  |                                        |
| Interpreting data and making inferences                   | N                  |                                        |
| <b>F. Logic</b>                                           |                    |                                        |
| Using inductive reasoning to generate hypotheses          | N                  |                                        |



|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Measurement—Continued</b>                                                |   |    |
| Using formulas to determine measures                                        | H | ** |
| <b>C. Geometry</b>                                                          |   |    |
| Using geometric properties of plane and solid figures to determine measures | N |    |
| Constructing standard straightedge compass figures                          | N |    |
| Making models, scale drawings, orthographic projections                     | N |    |
| Establishing congruence, similarity, symmetry                               | N |    |
| Using coordinate geometry                                                   | N |    |
| <b>D. Patterns and Functions</b>                                            |   |    |
| Determining and extending patterns                                          | N |    |
| Graphing functions and investigating their properties                       | N |    |

|                                                                             |   |    |
|-----------------------------------------------------------------------------|---|----|
| <b>Logic—Continued</b>                                                      |   |    |
| Using deductive reasoning to reach conclusions                              | N |    |
| Distinguishing between necessary and sufficient conditions                  | N |    |
| <b>G. Algebra</b>                                                           |   |    |
| Creating mathematical models to represent situations                        | N |    |
| Evaluating algebraic expressions                                            | N |    |
| Solving equations and inequalities                                          | M | ** |
| Solving problems involving direct and inverse variation, including percents | N |    |

| PUBLISHER                   | TITLE                                         | COPYRIGHT |
|-----------------------------|-----------------------------------------------|-----------|
| West Educational Publishing | <i>Arithmetic: A Problem-Solving Approach</i> | 1985      |

### III. FRAMEWORK FOCUSES

| DEFINITION OF TERMS                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extent Included                                                                                                                                                  |
| <i>Substantially</i> means integrated throughout the book.<br><i>Somewhat</i> means taught at least occasionally.<br><i>Little or none</i> means little or none. |

#### A. Problem Solving (nonroutine problems)

See the definition on page 2 of the *Mathematics Framework*.

Is nonroutine problem solving modeled?

Are students taught specific strategies for solving nonroutine problems?

#### B. Estimation and Mental Arithmetic

Are students:

Taught specific techniques of estimation?

Encouraged routinely to estimate the answer before doing a problem?

Given exercises or games which include mental arithmetic?

Is estimation used:

With computational problems?

With calculator problems?

| Extent Included |          |                | Where             |                   |                             | How the Focus Is Presented in the Student's Edition |                  |                   |                 |                      |
|-----------------|----------|----------------|-------------------|-------------------|-----------------------------|-----------------------------------------------------|------------------|-------------------|-----------------|----------------------|
| Substantially   | Somewhat | Little or None | Student's Edition | Teacher's Edition | Teacher's Resource Material | Incorporated Within Lessons                         | Separate Lessons | Dedicated Chapter | Special Feature | With Review Material |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          |                |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              | X                 |                   |                             |                                                     | X                |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |
|                 |          | X              |                   |                   |                             |                                                     |                  |                   |                 |                      |

|                                                                                                                                            |  |   |   |   |  |  |   |   |  |   |  |
|--------------------------------------------------------------------------------------------------------------------------------------------|--|---|---|---|--|--|---|---|--|---|--|
| <b>C. Use of Calculators</b>                                                                                                               |  |   |   |   |  |  |   |   |  |   |  |
| Are they used:                                                                                                                             |  |   |   |   |  |  |   |   |  |   |  |
| To illustrate and/or develop concepts?                                                                                                     |  |   | X |   |  |  |   |   |  |   |  |
| In lessons designed to teach how to use calculators?                                                                                       |  | X |   | X |  |  |   | X |  | X |  |
| In "calculator" problems?                                                                                                                  |  |   | X |   |  |  |   |   |  |   |  |
| <b>D. Use of Concrete Materials</b>                                                                                                        |  |   |   |   |  |  |   |   |  |   |  |
| Are they used:                                                                                                                             |  |   |   |   |  |  |   |   |  |   |  |
| When new concepts are introduced or when difficult problems are encountered?                                                               |  |   | X |   |  |  |   |   |  |   |  |
| Continuously as ideas are developed?                                                                                                       |  |   | X |   |  |  |   |   |  |   |  |
| Do students work with pictures, drawings, and other representations?                                                                       |  | X |   | X |  |  | X |   |  |   |  |
| <b>E. Situational Lessons</b>                                                                                                              |  |   |   |   |  |  |   |   |  |   |  |
| Are lessons included which begin with a description of an interesting, challenging situation from which a number of activities can emerge? |  |   | X |   |  |  |   |   |  |   |  |
| Do the lessons provide for:                                                                                                                |  |   |   |   |  |  |   |   |  |   |  |
| Several problems to be identified?                                                                                                         |  |   | X |   |  |  |   |   |  |   |  |
| A variety of approaches to be used?                                                                                                        |  |   | X |   |  |  |   |   |  |   |  |
| Study over several class periods?                                                                                                          |  |   | X |   |  |  |   |   |  |   |  |
| <b>F. Cooperative Learning Groups</b>                                                                                                      |  |   |   |   |  |  |   |   |  |   |  |
| Are students:                                                                                                                              |  |   |   |   |  |  |   |   |  |   |  |
| Taught cooperative learning techniques?                                                                                                    |  |   | X |   |  |  |   |   |  |   |  |
| Given problems which are specifically designed to be solved in groups?                                                                     |  |   | X |   |  |  |   |   |  |   |  |

| PUBLISHER                   | TITLE                                         | COPYRIGHT |
|-----------------------------|-----------------------------------------------|-----------|
| West Educational Publishing | <i>Arithmetic: A Problem-Solving Approach</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER

##### Part A. Components and Ancillary Materials

##### 1. Description of components supplied with the student's edition without cost

The teacher's manual contains five additional tests per chapter, three additional cumulative review tests for Part I, and several final exams. Transparency masters are included for the appendix, "Arithmetic in a Nutshell."

The *West MathTest* is a software package that allows the teacher to generate up to 600 different tests per chapter. The teacher may choose any combination of arithmetic problems, series of matching exercises, and multiple-choice questions for the test. The option of printing just the answers or solutions and answers also exists. The software is available for the Apple IIe®, IIc®, or IIplus®.

##### 2. Description of the teacher's edition

- ☐ Annotated
- ☐ Teaching notes
- ☒ Answers/placement

##### 3. Description of teacher's resource materials

Teacher's resource materials are included in the teacher's manual (see the preceding description).

##### 4. Description of related materials available for sale

No additional items are for sale.

| PUBLISHER                   | TITLE                                         | COPYRIGHT |
|-----------------------------|-----------------------------------------------|-----------|
| West Educational Publishing | <i>Arithmetic: A Problem-Solving Approach</i> | 1985      |

#### IV. INFORMATION FROM THE PUBLISHER—Continued

##### Part B. Table of Contents

##### Part I: Arithmetic Revisited

##### 1. Whole Numbers

|                                              |    |
|----------------------------------------------|----|
| Pretest .....                                | 4  |
| Basic Symbols .....                          | 6  |
| Place Value, Writing, and Rounding Off ..... | 9  |
| Addition .....                               | 13 |
| Subtraction .....                            | 17 |
| Multiplication .....                         | 21 |
| Division .....                               | 26 |
| Powers of Whole Numbers .....                | 34 |
| Problem Solving .....                        | 38 |

##### 2. Fractions

|                                          |    |
|------------------------------------------|----|
| Pretest .....                            | 55 |
| Introducing Fractions .....              | 57 |
| Mixed Numbers .....                      | 62 |
| Reducing Fractions to Lowest Terms ..... | 65 |
| Addition .....                           | 71 |
| Subtraction .....                        | 78 |
| Multiplication .....                     | 84 |
| Division .....                           | 90 |
| Common Fractional Problems .....         | 96 |
| Ratio and Proportion .....               | 99 |

##### 3. Decimals

|               |     |
|---------------|-----|
| Pretest ..... | 119 |
|---------------|-----|

|                                           |     |
|-------------------------------------------|-----|
| Introducing Decimal Numbers .....         | 120 |
| Rounding Off Decimals .....               | 126 |
| Fraction-Decimal Conversions .....        | 129 |
| Addition .....                            | 134 |
| Subtraction .....                         | 139 |
| Multiplication .....                      | 144 |
| Division .....                            | 149 |
| The Hand-Held Calculator (optional) ..... | 157 |

##### 4. Percentage

|                                                   |     |
|---------------------------------------------------|-----|
| Pretest .....                                     | 173 |
| Converting from One Percent Form to Another ..... | 174 |
| Determining the Percentage .....                  | 180 |
| Determining the Base .....                        | 184 |
| Determining the Rate .....                        | 187 |
| Increasing and Decreasing Percent Problems .....  | 192 |
| Simple Interest .....                             | 196 |
| Bank Discount .....                               | 201 |

##### Part II: Independent Applications of Arithmetic

##### 5. Geometry

|                 |     |
|-----------------|-----|
| Perimeter ..... | 226 |
| Area .....      | 235 |
| Volume .....    | 244 |

##### 6. Measurement

|                                                               |     |
|---------------------------------------------------------------|-----|
| English System .....                                          | 267 |
| Arithmetic of Measurement Numbers .....                       | 272 |
| Metric System .....                                           | 279 |
| Converting English Units to Metric Units and Vice Versa ..... | 290 |

##### 7. An Algebra Warm-up

|                                        |     |
|----------------------------------------|-----|
| Basic Definitions .....                | 307 |
| Addition of Signed Numbers .....       | 312 |
| Subtraction of Signed Numbers .....    | 316 |
| Multiplication of Signed Numbers ..... | 321 |
| Division of Signed Numbers .....       | 324 |
| Exponents .....                        | 326 |
| One-Step Equations .....               | 334 |
| Multistep Equations .....              | 337 |

##### Appendix I

|                                        |     |
|----------------------------------------|-----|
| Arithmetic Practice Problem Sets ..... | 351 |
|----------------------------------------|-----|

##### Appendix II

|                                |     |
|--------------------------------|-----|
| Arithmetic in a Nutshell ..... | 415 |
|--------------------------------|-----|

##### Appendix III

|                                                                |     |
|----------------------------------------------------------------|-----|
| Answers to Pretests, Warm-up Tests, and Cumulative Tests ..... | 428 |
|----------------------------------------------------------------|-----|

|             |     |
|-------------|-----|
| Index ..... | 431 |
|-------------|-----|

## Publications Available from the Department of Education

This publication is one of over 600 that are available from the California State Department of Education. Some of the more recent publications or those most widely used are the following:

| ISBN          | Title (Date of publication)                                                                 | Price  |
|---------------|---------------------------------------------------------------------------------------------|--------|
| 0-8011-0271-5 | Academic Honesty (1986)                                                                     | \$2.50 |
| 0-8011-0471-8 | Addendum to the 1985-86 California Private School Directory (1986)                          | 7.75   |
| 0-8011-0272-3 | Administration of Maintenance and Operations in California School Districts (1986)          | 6.75   |
| 0-8011-0216-2 | Bilingual-Crosscultural Teacher Aides: A Resource Guide (1984)                              | 3.50   |
| 0-8011-0238-3 | Boating the Right Way (1985)                                                                | 4.00   |
| 0-8011-0275-8 | California Dropouts: A Status Report (1986)                                                 | 2.50   |
| 0-8011-0472-6 | California Private School Directory (1986)                                                  | 9.00   |
| 0-8011-0473-4 | California Public School Directory (1987)                                                   | 14.00  |
| 0-8011-0488-2 | Caught in the Middle: Educational Reform for Young Adolescents in California Schools (1987) | 5.00   |
| 0-8011-0241-3 | Computer Applications Planning (1985)                                                       | 5.00   |
| 0-8011-0242-1 | Computers in Education: Goals and Content (1985)                                            | 2.50   |
| 0-8011-0659-1 | Educational Software Preview Guide (1987)                                                   | 2.00   |
| 0-8011-0243-X | Elementary School Program Quality Criteria (1985)                                           | 3.25   |
| 0-8011-0041-0 | English-Language Arts Framework for California Public Schools (1987)                        | 3.00   |
| 0-8011-0663-X | English-Language Arts Model Curriculum Guide, Kindergarten Through Grade Eight (1987)       | 2.25   |
| 0-8011-0247-2 | Handbook for Conducting an Elementary Program Review (1985)                                 | 4.50   |
| 0-8011-0248-0 | Handbook for Conducting a Secondary Program Review (1985)                                   | 4.50   |
| 0-8011-0289-8 | Handbook for Physical Education (1986)                                                      | 4.50   |
| 0-8011-0249-9 | Handbook for Planning an Effective Foreign Language Program (1985)                          | 3.50   |
| 0-8011-0320-7 | Handbook for Planning an Effective Literature Program (1987)                                | 3.00   |
| 0-8011-0179-4 | Handbook for Planning an Effective Mathematics Program (1982)                               | 2.00   |
| 0-8011-0290-1 | Handbook for Planning an Effective Writing Program (1986)                                   | 2.50   |
| 0-8011-0224-3 | Handbook for Teaching Cantonese-Speaking Students (1984)                                    | 4.50   |
| 0-8011-0291-X | Handbook for Teaching Filipino-Speaking Students (1986)                                     | 4.50   |
| 0-8011-0204-9 | Handbook for Teaching Portuguese-Speaking Students (1983)                                   | 4.50   |
| 0-8011-0227-8 | Individual Learning Programs for Limited-English-Proficient Students (1984)                 | 3.50   |
| 0-8011-0466-1 | Instructional Patterns: Curriculum for Parenthood Education (1985)                          | 12.00  |
| 0-8011-0208-1 | Manual of First-Aid Practices for School Bus Drivers (1983)                                 | 1.75   |
| 0-8011-0209-X | Martin Luther King, Jr., 1929-1968 (1983)                                                   | 3.25   |
| 0-8011-0358-4 | Mathematics Framework for California Public Schools (1985)                                  | 3.00   |
| 0-8011-0664-8 | Mathematics Model Curriculum Guide, Kindergarten Through Grade Eight (1987)                 | 2.75   |
| 0-8011-0252-9 | Model Curriculum Standards: Grades Nine Through Twelve (1985)                               | 5.50   |
| 0-8011-0303-7 | A Parent's Handbook on California Education (1986)                                          | 3.25   |
| 0-8011-0305-3 | Paths Through High School: A California Curriculum Study (1987)                             | 4.00   |
| 0-8011-0671-0 | Practical Ideas for Teaching Writing as a Process (1987)                                    | 6.00   |
| 0-8011-0309-6 | Program Guidelines for Hearing Impaired Individuals (1986)                                  | 6.00   |
| 0-8011-0258-8 | Program Guidelines for Severely Orthopedically Impaired Individuals (1985)                  | 6.00   |
| 0-8011-0310-X | Program Guidelines for Visually Impaired Individuals (1986)                                 | 6.00   |
| 0-8011-0213-8 | Raising Expectations: Model Graduation Requirements (1983)                                  | 2.75   |
| 0-8011-0311-8 | Recommended Readings in Literature, K-8 (1986)                                              | 2.25   |
| 0-8011-0214-6 | School Attendance Improvement: A Blueprint for Action (1983)                                | 2.75   |
| 0-8011-0189-1 | Science Education for the 1980s (1982)                                                      | 2.50   |
| 0-8011-0339-8 | Science Framework for California Public Schools (1978)                                      | 3.00   |
| 0-8011-0354-1 | Science Framework Addendum (1984)                                                           | 3.00   |
| 0-8011-0665-6 | Science Model Curriculum Guide, Kindergarten Through Grade Eight (1987)                     | 3.25   |
| 0-8011-0262-6 | Secondary School Program Quality Criteria (1985)                                            | 3.25   |
| 0-8011-0315-0 | Selected Financial and Related Data for California Public Schools (1986)                    | 3.00   |
| 0-8011-0265-0 | Standards for Scoliosis Screening in California Public Schools (1985)                       | 2.50   |
| 0-8011-0486-6 | Statement on Preparation in Natural Science Expected of Entering Freshmen (1986)            | 2.50   |
| 0-8011-0318-5 | Students' Rights and Responsibilities Handbook (1986)                                       | 2.75   |
| 0-8011-0234-0 | Studies on Immersion Education: A Collection for U.S. Educators (1984)                      | 5.00   |
| 0-8011-0192-1 | Trash Monster Environmental Education Kit (for grade six)                                   | 23.00  |
| 0-8011-0236-7 | University and College Opportunities Handbook (1984)                                        | 3.25   |
| 0-8011-0344-4 | Visual and Performing Arts Framework for California Public Schools (1982)                   | 3.25   |

Orders should be directed to:

California State Department of Education  
P.O. Box 271  
Sacramento, CA 95802-0271

Please include the International Standard Book Number (ISBN) for each title ordered.

Remittance or purchase order must accompany order. Purchase orders without checks are accepted only from governmental agencies in California. Sales tax should be added to all orders from California purchasers.

A complete list of publications available from the Department, including apprenticeship instructional materials, may be obtained by writing to the address listed above.